Lummi Nation Silver Reef Casino Mitigation Project Wetland Delineation Report

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Introduction and Summary

The Silver Reef Hotel, Casino, and Spa and associated parking lots were constructed in 2001/2002 on the Lummi Indian Reservation, at the southeast corner of the intersection of Haxton Way and Slater Road, Whatcom County, WA. The project resulted in filling 10.7 acres of degraded palustrine emergent wetlands that were dominated by non-native invasive reed canarygrass (*Phalaris arundinacea*). To compensate for wetland impacts, approximately 17.1 acres of predominately upland grassland on the mitigation site were graded to allow passive restoration of saltmarsh conditions. Permit Conditions require monitoring of the mitigation site for ten years, and delineation of the mitigation wetland in the final year of monitoring (2011). The wetland mitigation property is held in trust by the United States for the exclusive use of the Lummi Indian Business Council. The Lummi Indian Business Council, acting through the Lummi Natural Resources Department, authorized the wetland delineation. This report describes the results of the required delineation; Year ten monitoring results are documented in a separate report (Otak, 2011).

Delineation of the Silver Reef Casino Wetland Mitigation site was conducted on June 1 and 2, 2011 by Otak, Inc. and staff members of the Lummi Natural Resources Department (LNR). One 14.2 acre wetland, Wetland A, was delineated on the mitigation site, and it includes 1.1 acres of vegetated mud flats (see the wetland delineation map, Figure 2 in Appendix B). Wetland A is rated as Category 1 with a 100-foot buffer [Lummi Administrative Regulation Title 17 Wetland Management Regulations (17 LAR 06.030)]. The delineation also designated 3.9 acres of unvegetated mud flats on the mitigation site. Although the unvegetated portions of the mud flats do not satisfy wetland criteria, they do satisfy requirements for other Waters of the United States. In total, 18.1 acres of Waters of the United States were delineated on the mitigation site.

In the ten years since the mitigation plan was installed (it was completed in August 2001), the site has developed into a thriving estuarine ecosystem with a mosaic of high saltmarsh, low saltmarsh, and mudflat habitats, as well as salt-sensitive wetland areas and limited upland areas. Consequently, the mitigation site provides significant uplift of the functions previously provided by the wetland areas impacted by construction of the Silver Reef Hotel-Casino complex, and the limited wetland areas on the mitigation site prior to installation of the mitigation plan.

Site Location

The mitigation site is located on the Lummi Indian Reservation, adjacent to the dike access road, southwest of the intersection of Kwina Road and Hillaire Road, Section 14, Township 38 North, Range 1 East, at Latitude North 48.7897, Longitude West -122.6608 (at the western end of the mitigation site) (see Figures 1a and 1b in Appendix B).

Section 2— Approach and Site Descriptions

Approach

On June 1 and 2, 2011, the Silver Reef Casino Wetland Mitigation site was assessed for presence of wetlands and other natural habitats. In compliance with Federal and Lummi Nation guidance and regulations, wetlands were delineated using the Routine Methodology as specified in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE, 2010). While only the portion of the wetland located on the mitigation site was delineated, Wetland A extends offsite to the east, with one small lobe to the north.

Delineation was conducted by Otak, Inc. wetland biologists Suzanne Anderson and Stephanie Smith, and LNR staff members Frank Lawrence III and Monika Lange. A complete description of methods used to conduct the wetland delineation is included in Appendix A. Following routine methodology, data on vegetation, soils, and hydrology were collected in areas that appeared to have wetland characteristics. In addition, plots were located in a transect across the site, and upland plots were generally paired with wetland plots to determine the location of the wetland boundary. Data for wetland and upland plots were recorded on USACE field data sheets (see Appendix C). Data plots and points along the wetland edges were marked with sequentially numbered pink-and-black-striped flagging or pink pin-flags. Subsequently, LNR staff field surveyed the flags using a hand-held GPS unit (Trimble GeoXT), and downloaded the information into ArcMap10 GIS software. Horizontal accuracy of the Trimble GeoXT is \pm 4 feet with post-processing. Wetland locations and features are described in Section 3—Results, and are shown on the wetland delineation map (see Figure 2 in Appendix B). Wetland determinations were informed by information from the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) map (USFWS, 2011), the Soil Survey for Whatcom County (United States Department of Agriculture (USDA, 2011)), and aerial photos (historic and recent) provided by the Lummi Nation (see Appendix F). Site photos taken during the wetland delineation are located in Appendix D.

The condition of wetland buffers was qualitatively assessed using the following criteria:

- Dominant land use (e.g., agriculture, residential, commercial, industrial)
- Dominant buffer vegetation type (tree, shrub, herb, vine, un-vegetated)
- Estimated percent cover of invasive plants by species

Weather Conditions

Although total monthly precipitation for the three months prior to the wetland delineation (March through May) was greater than the 25-year average, there were no major rain events in the two weeks immediately preceding the delineation (Utah State University Climate

Section 2—Approach and Site Descriptions

Continued

Center, 2011; Western Regional Climate Center, 2011). Weather conditions during the delineation were cloudy on June 1, 2011, and cloudy with occasional light rain showers on June 2, 2011.

Description of the Impacted Site

Construction of the Silver Reef Hotel, Casino, and Spa and associated parking facilities resulted in impacting approximately 10.7 acres of degraded, palustrine emergent wetlands. The impact site is located near the southeast corner of Haxton Way and Slater Road. Before construction of the Hotel-Casino complex, baseball fields were located at the southern end of the site, and fast food and mini-mart businesses were located at the northwest corner of the site (see before and after aerial photographs in Appendix F). The Lummi Nation purchased the site in 1991, and prior to the purchase, the majority of the 40-acre site had been used for agricultural purposes for many years. LNR staff conducted a wetland delineation in 1998, and delineated two emergent (wet pasture) wetlands with a total area of 11.4 acres: one wetland was 10.7 acres; and the second was 0.7 acres. Due to past agricultural practices, the site had mixed elevations, and the wetlands included a mosaic of upland nodes. The wetland pasture areas were dominated by reed canarygrass, with some meadow foxtail (Alopecurus pratensis) and creeping buttercup (Ranunculus repens). Upland vegetation was dominated by Canada thistle (*Cirsium arvense*) and Himalayan blackberry (*Rubus armeniacus*). The property is located within the 100-year flood plain of the Nooksack River, and Schell Creek flows southward in the eastern portion of the site.

Description of the Mitigation Site, Pre- and Post-installation

To compensate for wetland impacts associated with construction of the Silver Reef Hotel-Casino complex, approximately 17.1 acres of predominately upland grassland were graded to allow passive restoration of saltmarsh conditions and establish a mosaic of estuarine habitats. The mitigation site is located adjacent to a brackish slough that outlets to Lummi Bay (see Figures 1 and 2 in Appendix B). Prior to grading, the site was used for agricultural purposes, and it consisted of upland grassland, a freshwater wet pasture (approximately 0.6 acres), and a swale vegetated with saltmarsh species (approximately 0.2 acres) (Sheldon & Associates, 2000) (see historic aerial photos in Appendix F). Except for the swale, prior to installation of the mitigation plan, the site was dominated by non-native grass species.

As designed, installation of the mitigation plan in 2001 resulted in creation of three channels that connect the mitigation area to the brackish slough, which is hydrologically connected to Lummi Bay via culverts and tide-gates (see Figures 1b and 2 in Appendix B). Because of the tide gates, there is an approximate two-hour time delay between the low/high tides in Lummi Bay and the low/high tides at the mitigation site. The location of the inundation line

Section 2—Approach and Site Descriptions

Continued

was mapped in December 2010, and it provides a qualitative assessment of tidal amplitude on the site (see Figure 3 in Appendix B). The site is relatively flat with small elevation changes that resulted from site grading; however, the elevation changes have been sufficient to establish a variety of vegetation communities and habitats (see Figure 4 in Appendix B).

In the ten years since the mitigation site was installed, the site has developed into a thriving estuarine ecosystem with a mosaic of high saltmarsh, low saltmarsh, and mudflat habitats, as well as salt-sensitive wetland areas and limited upland areas. The majority of the vegetation on the mitigation site is herbaceous. All vegetation in the mitigation area established naturally – no herbaceous or woody species were installed or planted. The location and extent of the current vegetation communities/habitats is primarily determined by elevation and proximity to the slough and channels (see Figures 2 and 4 in Appendix B). As designed, the three channels consist of mud flat, much of which is covered by filamentous green algae, with large patches of widgeongrass (*Ruppia maritima*). The low saltmarsh communities are located in a band along the channels and slough – the width of the community is determined by topography. High saltmarsh communities are located above the low saltmarsh communities. The Baltic rush (*Juncus balticus*)/Pacific silverweed (*Argentina anserina*) community is the most common high saltmarsh community, and it is located in a band around the site. The saltsensitive wetland areas are located at higher elevations around the outer perimeter of the site (mostly on the north and east sides), and upland areas are located where elevation is highest. Refer to the Year 10 (2011) monitoring report (Otak, 2011) for a detailed listing of plant species observed on site.

The dominant non-native invasive species found on site include reed canarygrass, Himalayan blackberry, and Canada thistle. There is an extensive fallow field on the north side of the mitigation site that is a monoculture of reed canarygrass. Despite that, invasive species mapping that was conducted as part of the annual monitoring calculated that only 3.4 percent of the 17.1-acre mitigation site has coverage by reed canarygrass and Himalayan blackberry (Otak, 2011).

Soils on site are listed by the Natural Resource Conservation Service (NRCS) as Eliza silt loam, drained, 0 to 1 percent slopes (USDA, 2011). The soils on site are generally very sandy or loamy sand. Due to grading, there are some areas where it appears that soil layers have been mixed and in many locations throughout the site there is a compacted layer at approximately six inches.

The mitigation site is providing wildlife habitat. Birds are the most frequently observed and reported animals – numerous species of shorebirds, waterfowl, songbirds, and birds of prey were observed on or over the mitigation site in 2011. Mammals, including coyotes, deer, and

Section 2—Approach and Site Descriptions

Continued

river otters regularly use the mitigation site, and shrimp and Sticklebacks have been observed at high tide. For a detailed listing of animal species observed on site refer to the Year 10 (2011) monitoring report (Otak, 2011).

Additional Information

In addition to the previously mentioned information sources (e.g. USFWS, USDA), several other sources were researched to aid in determining the wetland rating and assessing functions. Below is a summary of the information.

- The wetland mitigation site is not included on the National Wetlands Inventory (NWI) (USFWS, 2011). However, the NWI maps several wetlands near the mitigation site, including the estuary.
- The mitigation site section/township/range is not included on the Washington State Department of Natural Resources (DNR) Natural Heritage Features Associated with Wetlands list (Washington State Department of Natural Resources, 2011).
- The Lummi Indian Reservation is a federal reserve, and only federal or tribal laws apply to wildlife management on the Reservation. Information regarding priority habitats and species were provided by the Lummi Nation Natural Resources Department.

No known priority or endangered species are present in Wetland A, however, there are numerous species that are known to be present nearby, or have a high likelihood of being present near the mitigation site, and potentially using Wetland A. Such uses may include nesting, foraging, and refugia. There is a high likelihood that Marbled Murrelets, Bald Eagles, and Peregrine Falcons are present near Wetland A during some portions of the year. There are several known Bald Eagle nesting sites within two miles of Wetland A. There are also known Peregrine Falcon nesting sites near Wetland A, and a significant portion of the land surrounding (and including) Wetland A is listed by WDFW as Peregrine Falcon Use Area. Both Bald Eagles and Peregrine Falcons have been observed flying over the mitigation site.

Wetland A

The wetland delineation map (Figure 2 in Appendix B) depicts Wetland A and the data points used to determine the wetland boundary. Data sheets are included in Appendix C. While only the portion of the wetland located on the mitigation site was delineated, Wetland A extends offsite to the east, with one small lobe to the north. Wetland A is the only wetland located within the mitigation area, and it includes portions of the mud flats that are vegetated by macrophytic species (widgeongrass) with greater than 5 percent cover (Corps of Engineers Delineation Manual, Environmental Laboratory, 1987). The filamentous green algae covering much of the remainder of the mud flats was not considered to be a macrophytic species for delineation purposes. Wetland A is predominately an Estuarine Emergent wetland, dominated by salt-tolerant species including Baltic rush, Pacific silverweed, alkali bulrush (Scirpus maritimus), salt-grass (Distichlis spicata), and creeping bentgrass (Agrostis stolonifera) (see Figure 4 in Appendix B). At higher elevations, a narrow band of Palustrine Emergent wetland is located adjacent to the north and east sides of the Estuarine Emergent wetland. The Palustrine Emergent wetland is dominated by salt-sensitive hydrophytic herbaceous species such as quackgrass (*Elytrigia repens*) and velvet grass (*Holcus lanatus*), with a strip of red alders (Alnus rubra) and willows (Salix sp.) on and adjacent to the berm that forms the northern boundary of the mitigation site.

The primary hydrology source for Wetland A is the twice-daily tidal inundation - see Figure 3 in Appendix B for the extent of tidal inundation. Soils in the wetland are generally characterized as gleyed clay/silty sand in the lower portions of the wetland, or sand with prominent redox concentrations (Sandy Redox S5) in slightly higher portions of the wetland. See data sheets in Appendix C for details.

Non-wetland areas include several small islands of upland 'carved' out of Wetland A, upland areas adjacent to the north side of Wetland A, and unvegetated mudflat. As mentioned previously, the filamentous green algae covering much of the mud flats was not considered to be a macrophytic species for delineation purposes. Upland areas are dominated by non-native grass species including soft brome (*Bromus hordeaceus*) and orchardgrass (*Dactylis glomerata*).

Wetland Category

The Lummi Administrative Regulation (LAR) Title 17 Wetland Management Regulations (17 LAR 06.030), requires wetlands to be rated according to the *Washington State Wetland Rating System for Western Washington-Revised, 2004 Edition* (Hruby, 2004). Wetland A was categorized based on special characteristics because it is an estuarine wetland, and it rates as Category I because: it is relatively undisturbed; has less than 10-percent cover by non-native invasive

species; and it is contiguous with tidal channels, depressions with open water, and freshwater wetlands. See Appendix E for the Ecology Rating Form.

Buffers

Buffers are assigned according to LAR Title 17 Water Resources Protection Code (17.06.070). Category 1 wetlands require a 100-foot buffer width to protect wetland functions. The majority of Wetland A buffer is located offsite, and most of the buffer consists of former agricultural fields that have not been worked in the recent years (see Figure 1 in Appendix B). The fields are dominated by non-native grasses, and there is some presence of non-native invasive species including Himalayan blackberry, reed canarygrass, and tansy (*Tanacetum vulgare*). The buffer to the north of Wetland A consists of fallow agricultural fields that are dominated by reed canarygrass. The slough runs along the east side of the mitigation area, with fallow agricultural fields beyond that. The slough also forms the southern boundary of the mitigation area, with a tall berm (sea wall) (dominated by Himalayan blackberry) and the fish rearing embayment and Lummi Bay further to the south. The dike access road is located in the western portion of the buffer, with fallow agricultural fields beyond.

Functions

Information regarding the functions provided by the impacted wetlands at the Casino site was gathered from the *Wetland Delineation for Haxton/Slater 40 acres site* report, which was prepared by LNR staff, and dated July 30, 1998. The delineation report was included as Attachment 6 in the complete JARPA application submitted to the U.S. Army Corps of Engineers, Seattle District on October 29, 1999 by the Lummi Indian Business Council (Lummi Indian Business Council, 1999). The report assessed the functions of the wetlands at the Casino site using qualitative methods as well as the Washington Department of Ecology *Methods for Assessing Wetland Functions* (Hruby et al., 1999).

The functions of the two limited wetland areas at the mitigation site were qualitatively assessed in 2000, prior to installation of the mitigation project, and the wetland functions generally rated low (Sheldon and Associates, 2000). To be consistent with the preconstruction assessment of the mitigation site wetland areas, the same functions were qualitatively assessed in 2011 to determine the functions ten years post-construction. Additionally, the functions for Wetland A were assessed using the Washington State Department of Transportation Best Professional Judgment (BPJ) Characterization Tool (Null et al, 2000) (see Appendix E).

Table 1 below provides a summary of assessed functions for: the wetlands impacted by construction of the Silver Reef Hotel-Casino complex; the limited wetlands on the mitigation site before installation of the mitigation plan; and Wetland A on the mitigation site ten years after installation. The results demonstrate that the mitigation site provides significant uplift of the functions previously provided by the impacted Casino wetlands and the wetlands on the mitigation site prior to installation of the mitigation plan. Functions provided by the individual wetlands are discussed below.

			We	tland Fun	ctions			
Wetland Location	Flood/ Stormwater Control	Groundwater Support	Erosion/ Shoreline Protection	Water Quality Improvement	Natural Biological Support	Overall Habitat Functions	Specific Habitat Functions	Cultural/ Socio- economic
Casino Impact Site	Medium	Low	Low	High	Low	Low	Low	Low
Mitigation Site (pre- installation)	Low	Low	Low	Low-Med	Low	Low	Low	Low
Mitigation Site (10 years post- installation)	Low	Low	Medium	Med-High	High	High	High	High

Table 1—Wetland Function Summary

Functions of the Impacted Wetlands on the Casino Site

The two impacted wetlands on the Casino site consisted of fallow agricultural fields where depressional emergent wetlands developed. The wetlands were dominated by non-native invasive reed canarygrass, and remained shallowly inundated with rainwater through the winter and into the growing season. The wetlands received surface runoff from the surrounding fields and nearby roads, and had the potential to receive some floodwater from the nearby Nooksack River. Given the dense vegetation, the topographic depressions with seasonally ponded water, proximity to pollutant sources (roads), and the nearby river, the wetlands provided medium stormwater control and high water quality improvement functions. The report rated the function to recharge groundwater as low. Since the Casino wetlands were depressions without flowing water or significant wave action, they had no opportunity to provide shoreline protection, and provided a low level of erosion control function. The general habitat function was rated as low since the wetlands were dominated by reed canarygrass, had disturbed buffers, and were located near a busy intersection. The wetlands were rated as low for providing anadromous fish habitat since they had only shallow seasonal inundation and the constricted culvert would have hindered or precluded fish access. While the delineation report did not specifically assess the Cultural/Socio-Economic functions, they probably would have been rated as low, although the wetlands had

Section 3—Results Continued

likely provided some economic function in the past when they were used as pasture land. However, prior to being filled, the wetlands were fallow and no longer provided economic function, and would not have provided educational or cultural opportunities.

In summary, the impacted wetlands on the Casino site were low quality emergent wetlands that were dominated by non-native invasive species, and only provided water quality improvement and stormwater control functions.

Functions of the Small Wetlands on the Mitigation Site—Pre-Installation Before installation of the mitigation plan, the mitigation site predominately consisted of upland grasslands, with an approximate 0.6-acre wet pasture and a small saltmarsh swale (approximately 0.2 acres). The wet pasture wetland was located in a slight depression that entrapped surface water, and it was dominated by bluegrass (*Poa* sp.). The swale (approximately 10 feet wide) was dominated by salt-tolerant salt-grass and spear saltbush (Atriplex patula), and it outletted to the adjacent slough. Its apparent primary hydrology source was backflow from the slough during sufficiently high tides. The position of the mitigation area in the landscape (low point in the Nooksack River basin) provided the opportunity for the pre-installation wetlands to provide flood storage, however, their small size relative to the size of Lummi Bay and the Nooksack River basin precluded their potential to provide measurable flood water storage. The pre-installation wetlands provided low groundwater recharge functions – they were not inundated for long periods of time and the site had a shallow groundwater table (Sheldon & Associates, 2000). The pre-installation wetlands had little or no opportunity to provide erosion/shoreline protection. Due to the herbaceous vegetation, the pre-installation wetlands had the potential to improve water quality, but the short residence time and general lack of nearby pollutant sources diminished the opportunity for the wetland to perform this function to low/medium. The preinstallation wetlands and buffers provided low biological support and overall habitat functions due to the limited plant species diversity, lack of structural complexity, and prior land uses. The pre-installation wetlands lacked fish habitat. The mitigation site may have provided some economic functions when it was used for agricultural purposes, but prior to installation of the mitigation plan, the fields were fallow.

In summary, the pre-installation emergent wetlands rated low for the majority of the assessed functions. The overall low rating was due to the wetlands' small sizes, limited species diversity, and lack of structural/topographic complexity.

Functions of Wetland A—10 Years Post-Installation

As previously described, the site has developed into a thriving estuarine ecosystem with a mosaic of high saltmarsh, low saltmarsh, and mudflat habitats, as well as salt-sensitive wetland areas and limited upland areas. As was the case prior to mitigation installation, the position of Wetland A in the landscape provides the opportunity for it to provide flood storage, however, its size relative to the size of Lummi Bay and the Nooksack River basin precludes its potential to provide measurable flood water storage. The mitigation plan anticipated that this function would not be enhanced over previous conditions (Sheldon & Associates, 2000). Likewise, the mitigation plan anticipated that groundwater recharge functions would not be improved over the previous conditions due to the lack of long term ponding in Wetland A and the site's relatively high groundwater table. Wetland A provides medium erosion/shoreline protection - the created channels are protected from the bi-daily tidal flows by dense vegetation. Wetland A rates medium-high for water quality improvement - the relatively still water at the peak of high tide provides the opportunity for sediment to drop out, and nutrients to be taken up and debris to be filtered by the dense established vegetation, before water flows back out to Lummi Bay. The topographic variety and complex hydrologic regime in Wetland A and the resultant high diversity of plant species and intricate edges between vegetative communities (salt- and freshwater) have increased the biological support and overall habitat functions to high. Numerous shorebirds, wading birds, waterfowl, songbirds, and birds of prey have been seen in or around the wetland during site visits, and coyotes, deer, and river otters use the mitigation site on a regular basis. The connection of the created channels to the slough allow fish and shellfish the opportunity to use the mitigation area as refugia and foraging habitat, resulting in a high rating for specific habitat functions. This high rating in turn helps support the cultural and socio-economic functions of the mitigation site for the Lummi Nation, as fish and shellfish are very important to their culture and their economy. The success of the site as a passive saltmarsh restoration project may provide educational opportunities if the Lummi Nation wishes to pursue them.

In summary, Wetland A and the established mitigation site provide significant uplift of the functions previously provided by the Casino-impacted wetlands and the limited wetland areas on the mitigation site prior to installation of the mitigation plan.

Conclusion

To satisfy permit conditions, the wetland at the Silver Reef Casino compensatory mitigation site was delineated by Otak biologists and Lummi Natural Resources staff. A single, 14.2 acre wetland, Wetland A, was delineated on the mitigation site. Wetland A is predominately an estuarine emergent wetland with high- and low-saltmarsh communities, and 1.1 acres of vegetated mud flats (see the wetland delineation map, Figure 2 in Appendix B). It also includes limited areas of salt-sensitive, palustrine emergent communities. Wetland A is rated as Category 1 with a 100-foot buffer. The delineation also designated 3.9 acres of unvegetated mud flats on the mitigation site - the filamentous green algae covering much of the mud flats was not considered to be a macrophytic species for delineation purposes. Although the unvegetated portions of the mud flats do not satisfy wetland criteria, they do satisfy requirements for other Waters of the United States. In total, 18.1 acres of Waters of the United States were delineated on the mitigation site.

The created and enhanced estuarine wetlands that have become established on the mitigation site in the ten years since the mitigation plan was installed now provide numerous functions either de novo or at a higher level than previously provided by the wetlands impacted by construction of the Silver Reef Hotel-Casino complex, and the limited wetland areas on the mitigation site prior to installation of the mitigation plan. The net result is a significant uplift of the functions over previous conditions.

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 $Appendix \ A-Methods$

Wetland Delineation Method

After completing the background research, Stephanie Smith and Suzanne Anderson of Otak, Inc. and Frank Lawrence III and Monika Lange of Lummi Natural Resources conducted the wetland delineation June 1 and June 2, 2011. In compliance with Federal and Lummi Nation guidance and regulations, the wetland delineation followed the Routine Methodology as required by the US Army Corps of Engineers, wetlands were delineated according to methodology specified in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (US Army Corps of Engineers, 2010), with reference to the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987). The manuals define wetlands as follows:

"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

In determining whether an area meets this definition, both methodologies require examination of three parameters: vegetation, soils, and hydrology. For an area to be classified as wetland, hydrophytic vegetation, hydric soils, and wetland hydrology must be exhibited. These three parameters, and the methods used to assess them, are discussed in the following sections.

Procedure: During the site visits, the areas were walked to gain an overview of site conditions. Following routine methodology, data on vegetation, soils, and hydrology were collected in areas that appeared to have wetland characteristics. In addition, plots were located in a transect across the site, and upland plots were generally paired with wetland plots to determine the location of the wetland boundary. Data for wetland and upland plots were recorded on field data sheets. Additional data plots were informally evaluated to determine the location of the wetland edges. Data plots and points along the wetland edges were marked with sequentially numbered pink-and-black-striped flagging or pink pin-flags. The wetland flags were field surveyed using a hand-held GPS unit (Trimble GeoXT), and the information was downloaded into ArcMap10 GIS software. Horizontal accuracy of the Trimble GeoXT is +/- 2 feet with post-processing.

Vegetation

Hydrophytic vegetation is defined as the community of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to exert a controlling influence on the plant species present (Environmental Laboratory, 1987; US Army Corps of Engineers, 2010). The manuals concur that hydrophytic vegetation determinations should be based on the assemblage of plant species in the community, rather than on the presence or absence of particular indicator species.

<u>Plant Identification</u>: Plant species were identified using several standard taxonomic references including: Cooke, 1997; Hitchcock & Cronquist, 1973; and USDA PLANTS Database, 2011.

<u>Cowardin Classes:</u> Plants live in relatively stable and predictable species assemblages called communities. Plant communities on the site were identified according to a classification system

developed by the U.S. Fish and Wildlife Service (Cowardin et al., 1979). The Cowardin Community Classification System is based on vegetation, hydrology, and substrate (soil) characteristics.

<u>Determination of Hydrophytic Vegetation Criterion:</u> Hydrophytic vegetation indicators are specified in the *Corps Western Mountains, Valleys, and Coast Supplement* (U.S. Army Corps of Engineers, 2010). The manual stipulates that the Dominance Test (Indicator 1) is the basic indicator of hydrophytic vegetation. The hydrophytic vegetation criterion is met when more than 50 percent of the dominant species across all vegetation strata are hydrophytic, based on the wetland plant species indicator status from the *Region 9 section of the National List of Plant Species Occurring in Wetlands* (Reed 1988; Reed et al., 1993). The plant list separates vascular plants into five basic groups by their wetland indicator status (WIS), which is based on the frequency of occurrence in a wetland. The indicator status rating system is summarized in Table 1 below.

Table 1. Wetland Plant Indicator Status

Indicator Status	Definition
Obligate Wetland Plants (OBL)	Plants that almost always occur in wetlands under natural conditions - estimated probability of species occurring in wetlands is greater than 99% under natural conditions.
Facultative Wetland Plants (FACW)	Plants that usually occur in wetlands - estimated probability 67%-99%.
Facultative Plants (FAC)	Plants that are equally likely to occur in wetlands or non-wetlands: estimated probability of 34% – 66% to be found in wetlands.
Facultative Upland Plants (FACU)	Plants that usually occur in non-wetlands: estimated probability of 1% - 33% to be found in wetlands.
Obligate Upland (UPL)	Plants that almost always occur in non-wetlands - estimated probability of occurring in wetlands is <1%.

The Corps Western Mountains, Valleys, and Coast Supplement (US Army Corps of Engineers, 2010) defines all OBL, FACW, and FAC species (FAC+, FAC, and FAC-) as hydrophytic.

Dominant species were independently chosen from each stratum of the community (tree, shrub, woody vine, herb), and selected according to the 50/20 rule (US Army Corps of Engineers, 2010). Dominants are those species in each stratum that when ranked in descending order of absolute percent aerial coverage and cumulatively totaled, immediately exceed 50 percent of the total coverage of vegetation in the stratum, plus any additional plant species comprising 20 percent or more of the total coverage of vegetation in that stratum.

Some wetland plant communities may not satisfy the Dominance Test. In those cases where both hydric soil and wetland hydrology indicators are present, the manual defines other hydrophytic vegetation indicators. The *Corps Western Mountains, Valleys, and Coast Supplement* (U.S. Army Corps of Engineers, 2010) specifies that vegetation can be re-evaluated using the Prevalence Index (Indicator 2). The Prevalence Index takes into consideration all plant species in the community, not just the

Appendix A—Methods Continued

limited number of dominant species. In addition, Plant Morphological Adaptations (Indicator 3) can be used to distinguish certain wetland plant communities. As with the Prevalence Index, indicators of hydric soil and wetland hydrology must also be present.

If the methodologies listed above fail to indicate that hydrophytic vegetation is present, the manual outlines how problematic hydrophytic vegetation can be identified and the wetland delineated using a combination of observations made in the field, consulting reference sites, and/or supplemental information from technical literature references and other sources.

<u>Procedure:</u> For each data plot, plant species were identified and their absolute percent aerial coverage was estimated. Relative percent aerial coverage was used to determine dominant species in each stratum using the 50/20 rule, and the Dominance Test was applied. Vegetation was also sampled at regular intervals along, within, and outside the wetland boundaries for delineation purposes.

Soils

The presence of hydric soils is the second parameter required for wetland determination. Hydric soil is defined as "... a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (U.S. Army Corps of Engineers, 2010). Generally, saturation or inundation for more than a few days combined with microbial activity in the soil causes a depletion of oxygen. Anaerobic conditions promote biogeochemical processes such as the accumulation of organic matter, and the reduction, translocation, and/or accumulation of iron and other reducible elements. These processes result in characteristic morphologies, such as redoximorphic features and gleying, that persist in the soil during both wet and dry periods (USDA-NRCS, 2010). Redoximorphic features are spots or blotches of color occurring within a soil matrix of contrasting color, and they usually result from alternating anaerobic and aerobic soil conditions. When the soil is saturated, microbes reduce iron and manganese. Then when the soil dries and oxygen is available, the minerals are oxidized (iron appears rust-colored). Translocation of reduced iron and manganese when the soil is saturated can result in both accumulation (producing redoximorphic features when oxidized) and depletion (iron is removed which results in low chroma). Gleying occurs under long term anaerobic conditions when reduced iron is leached out of the soil layer leaving the matrix depleted of color. As a result, gleyed soils are predominantly neutral gray in color, although they are sometimes greenish- or blue-gray. Anaerobic conditions can result in the accumulation of organic matter and sulfur; the latter is apparent as hydrogen sulfide gas (rotten egg odor).

<u>Hydric Soil Indicators</u> include, but are not limited to: high organic content; hydrogen sulfide odor; soils with a depleted layer below a dark surface; soils with thick dark surfaces; sandy mucky mineral soils; sandy gleyed soils in the upper six inches; soils with a matrix chroma of 3 or less and distinct or prominent redoximorphic features; and soils with a depleted matrix (U.S. Army Corps of Engineers, 2010). The manual also provides guidance for problematic hydric soils.

Appendix A—Methods Continued

<u>Procedure:</u> Soils were sampled in each data plot to a depth of at least 20 inches where possible. Test holes were also dug at regular intervals along, within, and outside the wetland boundaries for delineation purposes. The soil was characterized and examined for hydric indicators. Soil colors (hue, value, and chroma) were determined using a Munsell color chart (Gretag Macbeth, 2000). Soil characteristics were compared to Natural Resource Conservation Service (NRCS) descriptions of mapped soils to either confirm the mapping or determine if an inclusion of another soil type was present.

Hydrology

Wetland hydrology, or the presence of water during the growing season, is the third parameter required for wetland determination (U.S. Army Corps of Engineers, 2010). The Corps standard requires 14 or more consecutive days of flooding or ponding, or a water table 12 inches (30 centimeters) or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10 (U.S. Army Corps of Engineers, 2010). Based on the typical growing season for the lowlands of Puget Sound, the project area should have at least 21 days of continuous inundation or saturation within 12 inches of the surface during the growing season to satisfy the criteria for wetland hydrology.

Growing Season: The Corps Western Mountains, Valleys, and Coast Supplement (U.S. Army Corps of Engineers, 2010) stipulates that the growing season has begun when two or more non-evergreen vascular plant species onsite show above-ground evidence of growth and development; or when the soil temperature at 12 inches (30 centimeters) deep is a minimum of 41° F (5° C). In addition, the beginning and end of the growing season can be established by using recorded meteorological data to estimate the median dates of 28° F (-2.2° C) air temperatures in spring and fall (U.S. Army Corps of Engineers, 2010).

Hydrology Indicators: Although direct observations of hydrology are often limited during the dry season, indicators may be present throughout the year. Primary indicators for wetland hydrology specified in the *Corps Western Mountains, Valleys, and Coast Supplement* (U.S. Army Corps of Engineers, 2010) include: observation of: inundation or saturation; watermarks; drift deposits; sediment deposits; algal mat or crust; iron deposits; surface soil cracks; inundation visible on aerial imagery; a sparsely vegetated concave surface; salt crust; aquatic invertebrates; hydrogen sulfide odor; oxidized rhizospheres along living roots; and presence of reduced iron. There are also secondary indicators such as the presence of a shallow aquitard or a positive FAC-Neutral Test. Whereas the presence of only one primary indicator is necessary to satisfy the criterion for wetland hydrology, the presence of at least two secondary indicators are required. The *Corps Western Mountains, Valleys, and Coast Supplement* (U.S. Army Corps of Engineers, 2010) also provides guidance for identifying wetlands that periodically lack indicators of wetland hydrology.

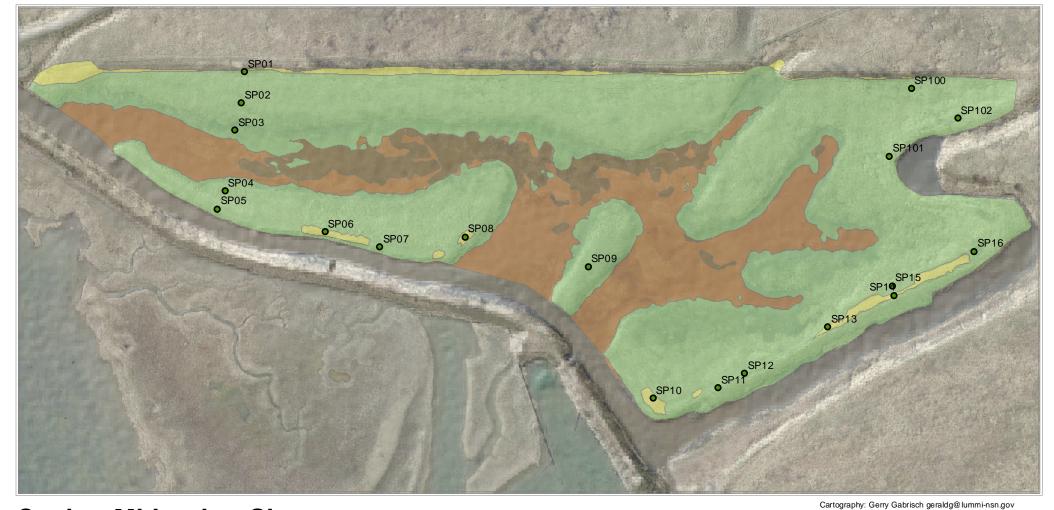
<u>Procedure:</u> Observations of hydrology indicators were made in and around the soil pit of each plot. Hydrology indicators were also examined at regular intervals along, within, and outside the wetland boundaries for delineation purposes. Observations of plant phenology, to determine whether the investigation was performed during the growing season, were made throughout the site.

Appendix B—Maps





Figures Ia and Ib—Vicinity Maps for the Silver Reef Casino Wetland Mitigation Site.



Casino Mitigation Site Delineataion and Test Pits

6/5/2011 - 8/1/2011

Wetland (13.09 acres)

Vegetated Mudflat (1.13 acres)

Mudflat (3.90 acres)

Upland (0.57acres)

Test Pits

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Datum, Projection, Coordinate System: NAD83 UTM 10 N

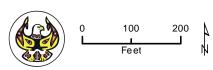


Figure 2



Casino Mitigation Site Inundation (12/21/2010)

Figure 3

Extent of Inundation

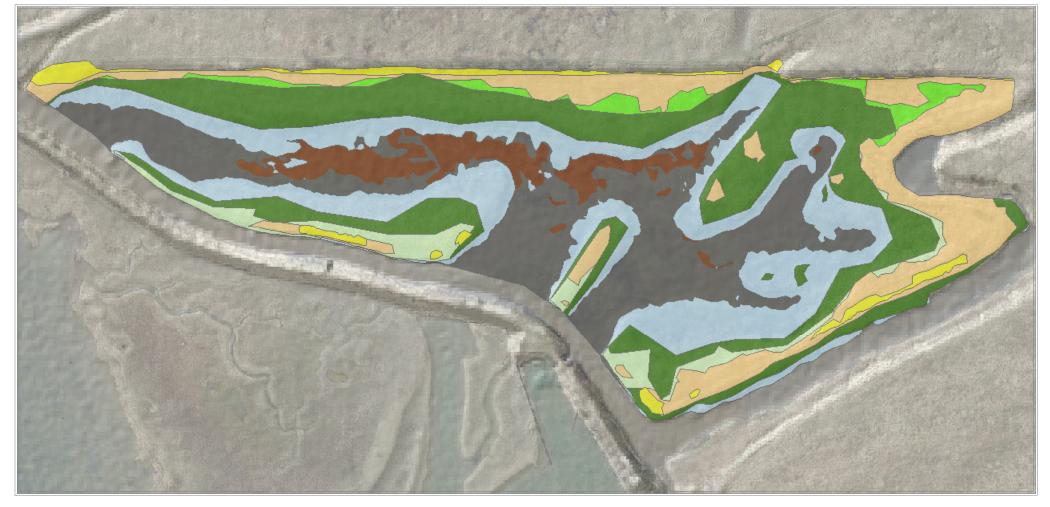
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The inundation on the islands was not delineated.



Casino Mitigation Site Vegetation Communities 6/5/2011 - 8/1/2011

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Appendix C—Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Silver Reef Casino Mitigation Site	(City/County	r: Whatcor	n County Sampling Date: 6/1/2011
				State: <u>WA</u> Sampling Point: <u>SP - / (μρ</u>
Investigator(s): Suzanne Anderson, Stephanie Smith, Fran				/
			•	convex, none): Slope (%):
				Long: W -122.6608 Datum:
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 perce				
Are climatic / hydrologic conditions on the site typical for th				
Are Vegetation No , Soil No , or Hydrology No				"Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No				needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map		samplin	g point l	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes N		le ti	ne Sampled	I ∆rea
Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N		with	nin a Wetlar	I Area nd? Yes No
				,
Remarks: 5P-1 is located on north	c beri	n on	MOYE	n peroject boundary E
just east of Transect	5			
VEGETATION – Use scientific names of plan	nts.			•
Tree Stratum (Plot size: 5' radius)	Absolute		Indicator	Dominance Test worksheet:
1	% Cover			Number of Dominant Species That Are OBL, FACW, or FAC: (A)
1. Alnus rubra			THU	That Are OBL, FACW, or FAC: (A)
2. 3.				Total Number of Dominant Species Across All Strata: (B)
J				Species Across Air Strata. (b)
T-	10	= Total Co	over	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1.				Total % Cover of: Multiply by:
2				OBL species x 1 =
3				FACW species x 2 =
4				FAC species x 3 =
5		7.10		FACU species x 4 =
Herb Stratum (Plot size: 5 radius)	-	= Total Co	over	UPL species x 5 =
1. Bromus hordeaceus ssp.	30	_ Y	UPL	Column Totals: (A) (B)
2. Festuca arundinacea	10	<u>y</u>	FAC-	Prevalence Index = B/A =
3. Vicia Sp.	10	У		Hydrophytic Vegetation Indicators:
4. Holcus lanatus	_ <u>5</u>	_ N	FAC	1 - Rapid Test for Hydrophytic Vegetation
5. Cirsium arvense	_ <u> </u>	$\frac{\lambda}{\lambda}$	FACU+	2 - Dominance Test is >50%
6. Lactuca Serriola	<u> 45</u>	- لم	NL	3 - Prevalence Index is ≤3.0¹
7				4 - Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain)
10				¹ Indicators of hydric soil and wetland hydrology must
11	- 55			be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 5' radius)		_= Total Co	over	
1. Rubus armeniacus	15	Y	FACU	Hydrophytic
2.				Venetation
	15	= Total Co	ver	Present? Yes No _X
% Bare Ground in Herb Stratum <u>35</u>				
Remarks: rectangular plot 15 6'X	15' on	- berr	n slop	re.
			•	

	cription: (Describe t Matrix			Redox Fe	eaturee					,		
Depth (inches)	Color (moist)	%	Color (moi	st)	%	Type ¹	Loc ²	Texture			Remarks	
0-1	2.5 V 3/3							Sandy	loam	W/r	00/5	
1-21	10 40 4/1		5 yr 3/	14 2	<u></u> -	C	PLIM	Sandy	loam	,		
1 ~1	75 YK 1/1		- 715 - 7								·····	
	P											
								,				
Type: C=C	oncentration, D=Depl	etion, RM=	-Reduced Mat	trix, CS=C	Covered o	r Coate	ed Sand Gr	ains. ² Lo	cation: I	PL=Pore	Lining, M≃	Matrix.
lydric Soil	Indicators: (Applica	able to all	LRRs, unless	s otherwis	se noted.	.)		Indicat	ors for F	roblem	atic Hydric	Soils ³ :
_ Histoso	I (A1)		Sandy Re						m Muck			
	pipedon (A2)			Matrix (S6					d Parent			46)
	listic (A3)			-		(excep	t MLRA 1)		ry Shallo ner (Expl		Surface (TF	12)
	en Sulfide (A4) d Below Dark Surface	(A11)		leyed Mat Matrix (F:				0	ici (Evhi	alli III INC	iliaiks)	
	ark Surface (A12)) (X () 1)		ark Surfac	•			³ Indicat	ors of hy	drophyti	c vegetatio	n and
	Mucky Mineral (S1)			Dark Surl		•		weti	and hydr	ology m	ust be pres	ent,
Sandy (Gleyed Matrix (S4)		Redox De	epressions	s (F8)			unle	ss distur	bed or p	roblematic.	
	Lavar (if propart):											
Restrictive	Layer (ii present).							1				
Restrictive Type:	Layer (ii present).		-,									V
Type: Depth (in	aches):							Hydric So	l Presen	t? Ye	es	Nο <u> </u>
Type: Depth (in Remarks:	oches):							Hydric So	I Presen	t? Ye	es	No X
Type:	oches):							Hydric So	l Presen	it? Ye	es	No X
Depth (in Remarks: YDROLO Wetland Hy	oches):			at apply)							(2 or more	
Type: Depth (in Remarks: YDROLC Wetland Hy Primary Indi	oches):OGY		d; check all the	at apply)	d Leaves	(B9) (e	except	Seco	ondary In	dicators		required)
Type: Depth (in Remarks: YDROLC Wetland Hy Primary Indi Surface	oches): OGY rdrology Indicators: icators (minimum of o		d; check all tha			` , `	except	Seco	ondary In Water-St	dicators	(2 or more	required)
Type:	OGY rdrology Indicators: icators (minimum of oil Water (A1) ater Table (A2)		d; check all the Wat	ter-Stained	2, 4A, and	` , `	except	Seco	ondary In Water-St	dicators ained Le nd 4B)	(2 or more	required)
Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi Surface High W Saturati	OGY rdrology Indicators: icators (minimum of oil Water (A1) ater Table (A2)		d; check all the Wat Salt	ter-Stained VILRA 1, 2	2, 4A, and 11)	d 4B)	except	Seco	ondary In Water-St 4A , at Drainage	dicators ained Le n d 4B) Pattern:	(2 or more	required)
Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi Surface High W Saturati Water M	oches):		d; check all that Wat Salt Aqu Hyd	ter-Stained VILRA 1, 2 t Crust (B1 patic Invert Irogen Sul	2, 4A, and 11) tebrates (lfide Odor	d 4B) (B13) r (C1)	·	Seco	ondary In Water-St 4A, ar Orainage Ory-Seas Saturatio	dicators ained Le nd 4B) Patterna on Waten	(2 or more paves (B9) s (B10) er Table (C:	required) (MLRA 1,
Type: Depth (in Remarks: YDROLC Vetland Hy Primary Indi Surface High W Saturati Water M Sedime	oches):		d; check all that Wat Salt Aqu Hyd	ter-Stained VILRA 1, 2 Crust (B1 latic Invert Irogen Sul dized Rhiz	2, 4A, and 11) tebrates (lfide Odor zospheres	d 4B) (B13) r (C1) s along	Living Roo	Seco	ondary In Water-St 4A, ar Drainage Dry-Seas Saturatio Geomorp	dicators ained Le nd 4B) Patterns on Wate n Visible	(2 or more paves (B9) s (B10) er Table (Ca e on Aerial I	required) (MLRA 1,
Type: Depth (in Remarks: YDROLC Vetland Hy Primary Indi Surface High W Saturati Water M Sedime Drift De Algal M	oches):		d: check all the Wat Salt Aqu Hyd K Oxic	ter-Stained VILRA 1, 2 Crust (B1 ratic Invert Irogen Sul dized Rhiz sence of F	2, 4A, and 11) tebrates (lfide Odor zospheres Reduced	d 4B) (B13) r (C1) s along Iron (C	Living Roo 4)	Secc.	ondary In Water-St. 4A, ar Drainage Dry-Seas Saturatio Geomorp Shallow /	dicators ained Le nd 4B) Pattern on Wate n Visible shic Posi	(2 or more paves (B9) s (B10) er Table (Carte on Aerial lition (D2) (D3)	required) (MLRA 1,
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Type:	ordes):	ne required magery (B s Surface (d; check all that Wat Salt Aqu Hyd Coxic Pres Rec Stur 7) Other B8)	ter-Stained MLRA 1, 2 Crust (B1 tatic Invert Irogen Sul dized Rhiz sence of Fent Iron R nted or Str er (Explain	2, 4A, and 11) tebrates (lfide Odor zospheres Reduced Reduction ressed Pl n in Rema	d 4B) (B13) r (C1) s along lron (C in Tille lants (C arks)	Living Roo 4) d Soils (C6 01) (LRR A)	Sect.	ondary In Water-St 4A, at Orainage Ory-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A	dicators ained Le nd 4B) Patterni on Wate n Visible hic Posi Aquitard ttral Tesi nt Moun	(2 or more eaves (B9) or Table (Case on Aerial lition (D2) (D3) tr (D5) or (D6) (Lf	required) (MLRA 1, 2) magery (C
Type: Depth (in Remarks: YDROLO YDROLO Wetland Hy Primary Indi Surface High W Saturati Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obsel Surface Wa	ordes):	magery (B Surface (d; check all that Wat Salt Aqu Hyd Pres Rec Stur 7) Other B8)	ter-Stained MLRA 1, 2 Crust (B1 ratic Invert Irogen Sul dized Rhiz sence of F cent Iron R nted or Str er (Explain	2, 4A, and 11) tebrates (lfide Odor zospheres Reduced I Reduction ressed Pl n in Rema	d 4B) (B13) r (C1) s along Iron (C) in Tille lants (C) arks)	Living Roo 4) ad Soils (C6 01) (LRR A)	Sect.	ondary In Water-St 4A, at Orainage Ory-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A	dicators ained Le nd 4B) Patterni on Wate n Visible hic Posi Aquitard ttral Tesi nt Moun	(2 or more eaves (B9) or Table (Case on Aerial lition (D2) (D3) tr (D5) or (D6) (Lf	required) (MLRA 1, 2) magery (C
Type: Depth (in Remarks: YDROLC Wetland Hy Primary Indi Surface High W Sedime Drift De Algal M Iron De Surface Inundat Sparse! Field Obset Surface Wa Water Table	ordes):	magery (B Surface (d; check all that Wat Salt Aqu Hyd Oxic Rec Stur 7) Other B8) No De	ter-Stained MLRA 1, 2 Crust (B1 tatic Invert frogen Sul dized Rhiz sence of F tent Iron R nted or Str er (Explain	2, 4A, and 11) tebrates (lifide Odor zospheres Reduced Reduction ressed Pl n in Rema	di 4B) (B13) r (C1) s along Iron (C in Tille lants (C arks)	Living Roo 4) ad Soils (C6 01) (LRR A)	seco	ondary In Water-St 4A, ar Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A	dicators ained Le nd 4B) Patterns on Wate n Visible shic Posi Aquitard rtral Test nt Moun ave Hurr	(2 or more eaves (B9) or Table (Carlotte on Aerial lition (D2) (D3) or (D5) or (D6) (L1) or (D6) or (D6) (L1) or (D6) (L1)	required) (MLRA 1, 2) magery (C
Type:	ordes):	magery (B s Surface (es es	1; check all that Wat Salt Aqu Hyd You Pres Stur 7) — Other B8) No X De No X De	ter-Stained MLRA 1, 2 Crust (B1 ratic Invert Irogen Sul dized Rhiz sence of F tent Iron R nted or Str er (Explain pth (inche	2, 4A, and 11) tebrates (lifide Odor zospheres Reduced Reduction ressed Pl n in Remai	d 4B) (B13) r (C1) s along Iron (C in Tille lants (C arks)	Living Roo 4) ed Soils (C6 01) (LRR A)	ts (C3)	ondary In Water-St 4A, ar Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A	dicators ained Le nd 4B) Patterns on Wate n Visible shic Posi Aquitard rtral Test nt Moun ave Hurr	(2 or more eaves (B9) or Table (Carlotte on Aerial lition (D2) (D3) or (D5) or (D6) (L1) or (D6) or (D6) (L1) or (D6) (L1)	required) (MLRA 1, 2) magery ((
Type:	oches):	magery (B s Surface (es es	1; check all that Wat Salt Aqu Hyd You Pres Stur 7) — Other B8) No X De No X De	ter-Stained MLRA 1, 2 Crust (B1 ratic Invert Irogen Sul dized Rhiz sence of F tent Iron R nted or Str er (Explain pth (inche	2, 4A, and 11) tebrates (lifide Odor zospheres Reduced Reduction ressed Pl n in Remai	d 4B) (B13) r (C1) s along Iron (C in Tille lants (C arks)	Living Roo 4) ed Soils (C6 01) (LRR A)	ts (C3)	ondary In Water-St 4A, ar Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A	dicators ained Le nd 4B) Patterns on Wate n Visible shic Posi Aquitard rtral Test nt Moun ave Hurr	(2 or more eaves (B9) or Table (Ca) on Aerial (D3) of (D5) ods (D6) (Linmocks (D7)	required) (MLRA 1, 2) magery (C

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Silver Reef Casino Mitigation Site		City/Coun	ty: Whatcon	n County	Samp	ling Date: <u>6</u>	/1/2011
				State: <u>WA</u>			_
Investigator(s): Suzanne Anderson, Stephanie Smith, Frank	Lawrence,	Monika I	.ange Section	on, Township, Rang	ge: <u>Section</u>	14 / T 38 N	/ R 1E
Landform (hillslope, terrace, etc.):							
Subregion (LRR): A							
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 percent							
Are climatic / hydrologic conditions on the site typical for this							
· -				"Normal Circumsta			No
Are Vegetation No , Soil No , or Hydrology No s					•		140
Are Vegetation No , Soil No , or Hydrology No n SUMMARY OF FINDINGS – Attach site map s				eeded, explain any ocations, trans			tures, etc.
		1	the Sampled	Area	s <u>X</u> ,		
Wetland Hydrology Present? Yes X No		wi	thin a Wetlar	nd? Yes	s_/\	No	
Remarks: plot located southeast	06 7	rans	ect 5				
VEGETATION – Use scientific names of plants	s.						
	Absolute		nt Indicator	Dominance Tes			
Tree Stratum (Plot size:) 1				Number of Domi That Are OBL, F.			, (A)
2.				Total Number of		_	
3.				Species Across		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	(B)
4				Percent of Domi	nant Species	1.5	
		= Total (Cover	That Are OBL, F	•	1116) (A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Inde	ex worksheet	t:	
1				Total % Cov	ver of:	Multiply	by:
3				OBL species		x 1 =	
4				FACW species		-	
5.				FAC species			
Elmdin		= Total 0	Cover	FACU species UPL species			
Herb Stratum (Plot size: 5' radius)	55	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	EARIALI			(A)	
1. Tuncus balticus 2. Potentilla anserina	45	$-\frac{\lambda}{\lambda}$	_ 1710117 0BL	Column Totals:			
3. Bromus hordeaceus sop.		/ /	UPL	Prevalence Hydrophytic Ve	e Index = B/A		
4. Lactuca Serriola			- NL	1	est for Hydrop		tion ·
5.		<u> </u>		X 2 - Dominar			GO11
6				1	nce Index is ≤		
7.				4 - Morpholo			de supporting
8				1	Remarks or on		sheet)
9				5 - Wetland			
10				Problematic			
11				Indicators of hy			
Woody Vine Stratum (Plot size:)	_/00	_= Total C	Cover	ST P. TOTAL STATE			
1				Hydrophytic			
2.				Vegetation	Yes _X		
		= Total C	Cover	Present?	Yes	No	
% Bare Ground in Herb Stratum5							
Remarks:							

Profile Beer	cription: (Describe to	the dent	h needed to docu	ment the i	indicator		30am		mpling Point: <u>SP - </u>
Depth	Matrix	inc acpt		x Feature			the absonce	or maioators	<i>3.,</i>
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks
0-6	2.5 V 4/1		7.5 YR 4/4	≥5	C	PL IM	Sandu	clase	
			11- 11- 11-						
10 = 10	(1.11 15/4)						sand		
<i>U-10</i>	Gley 1 2.5/N				·		Surca		
·									
							. 2.		
	oncentration, D=Deple Indicators: (Application)					ed Sand Gra			ore Lining, M=Matrix ematic Hydric Soils
•			KRS, uniess offic X Sandy Redox (ea.)				-
Histosol	pipedon (A2)	4	Sandy Redox (Stripped Matrix					n Muck (A10) Parent Mate	
	istic (A3)	-	Complet Matrix Loamy Mucky I		1) (excep	t MLRA 1)			k Surface (TF12)
	en Sulfide (A4)	_	Loamy Gleyed			,		er (Explain in	
Deplete	d Below Dark Surface	(A11)	Depleted Matrix	x (F3)					
	ark Surface (A12)	_	Redox Dark Su						ytic vegetation and
•	Mucky Mineral (S1)	-	Depleted Dark		- 7)				must be present,
	Gleyed Matrix (S4)		Redox Depress	sions (F8)			unles	s disturbed o	r problematic.
Restrictive	Layer (if present):	<u></u>		sions (F8)			unles	s disturbed of	r problematic.
Restrictive Type:	Layer (if present):			sions (F8)					
Restrictive Type:	Layer (if present):			sions (F8)			unles		Yes X No_
Restrictive Type: Depth (in Remarks:	Layer (if present):			sions (F8)					
Restrictive Type: Depth (in Remarks:	Layer (if present): ches):			sions (F8)					
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy	Layer (if present): ches): GGY drology Indicators:						Hydric Soil	Present?	Yes X No _
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi	Layer (if present): ches): GGY drology Indicators: cators (minimum of on		; check all that app	iy)			Hydric Soil	Present?	Yes X No _
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indic Surface	Layer (if present): ches): GY drology Indicators: cators (minimum of on Water (A1)		; check all that app	iy) iined Leav		except	Hydric Soil	Present? ndary Indicate /ater-Stained	Yes No ors (2 or more require Leaves (B9) (MLRA
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface	Layer (if present): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2)		; check all that app Water-Sta MLRA	iy) iined Leav 1, 2, 4A, a		except	Hydric Soil Secon W	Present? ndary Indicate /ater-Stained 4A, and 4B	Yes No No No No Leaves (B9) (MLRA
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface High Wa	Layer (if present): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3)		; check all that app — Water-Sta MLRA — Salt Crust	iy) ined Leav 1, 2, 4A, a (B11)	and 4B)	except	Hydric Soil Secon W	Present? Indary Indicate Ater-Stained 4A, and 4B rainage Patte	Yes No
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface High Wa X Saturati Water M	Layer (if present): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) Marks (B1)		; check all that app Water-Sta MLRA Salt Crust Aquatic In	iy) iined Leav 1, 2, 4A, a (B11) vertebrate	and 4B) es (B13)	except	Hydric Soil Secon W D D	Present? Adary Indicate Ater-Stained AA, and 4B rainage Patte ry-Season W	Yes No
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary India Surface High Wa Saturati Water M Sedime	Layer (if present): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)		; check all that app Water-Sta MLRA Salt Crust Aquatic In Hydrogen	ined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Od	es (B13) dor (C1)		Hydric Soil Secon W D D S S	Present? Indary Indicate /ater-Stained 4A, and 4B rainage Patte ry-Season W aturation Visi	Yes No
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface L High Wa L Saturati Water M Sedime Drift De	Layer (if present): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3)		; check all that appi — Water-Sta MLRA — Salt Crust — Aquatic In — Hydrogen — Oxidized I	iy) iined Leav 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe	and 4B) es (B13) dor (C1) eres along	Living Root	Hydric Soil	Present? Indary Indicate Vater-Stained 4A, and 4B Irainage Patte Iry-Season W Indicate	Yes No_ Ors (2 or more require Leaves (B9) (MLRA) orns (B10) ater Table (C2) ble on Aerial Imager osition (D2)
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Drift Dej Algal Ma	Layer (if present): ches): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		; check all that appl Water-Sta MLRA Salt Crust — Aquatic In — Hydrogen — Oxidized I — Presence	iy) 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce	es (B13) dor (C1) res along ed Iron (C	Living Root	Hydric Soil	Present? Indary Indicate Vater-Stained 4A, and 4B rainage Patte ry-Season W aturation Visil ecomorphic Pe hallow Aquita	Yes No_ Ors (2 or more require Leaves (B9) (MLRA) orns (B10) fater Table (C2) ble on Aerial Imager osition (D2) and (D3)
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface Light Water M Sedime Drift Del Algal Ma	Layer (if present): ches): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		: check all that appl — Water-Sta MLRA — Salt Crust — Aquatic In — Hydrogen — Oxidized I — Presence — Recent Iro	iy) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti	and 4B) es (B13) dor (C1) eres along ed Iron (C	Living Root 4) ed Soils (C6)	Hydric Soil	Present? Adary Indicate Ater-Stained AA, and 4B rainage Patte ry-Season W aturation Visite ieomorphic Periode AC-Neutral To	Yes No
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface Ly High Wa Saturati Water M Sedimel Drift Dep Algal Ma Iron Dep Surface	Layer (if present): ches): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	e required	check all that applications with the control of the	iy) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti r Stressed	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (E	Living Root	Hydric Soil	Present? Indary Indicate Vater-Stained 4A, and 4B rainage Patte ry-Season W aturation Visite eomorphic Period hallow Aquita AC-Neutral Tealised Ant Mo	Yes No
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary India Surface High Wa Saturati Water M Sedime Drift Dep Algal Ma Iron Dep Surface Inundati	Layer (if present): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Im	e required	; check all that app Water-Sta MLRA Salt Crust Aquatic In Hydrogen Coxidized In Presence Recent Iro Stunted or Other (Ex	iy) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti r Stressed	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (E	Living Root 4) ed Soils (C6)	Hydric Soil	Present? Indary Indicate Vater-Stained 4A, and 4B rainage Patte ry-Season W aturation Visite eomorphic Period hallow Aquita AC-Neutral Tealised Ant Mo	Yes No
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface L High Wa L Saturati Water M Sedime Drift De Algal Ma Iron Dep Surface Inundati Sparsel	Layer (if present): ches): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial In y Vegetated Concave	e required	; check all that app Water-Sta MLRA Salt Crust Aquatic In Hydrogen Coxidized In Presence Recent Iro Stunted or Other (Ex	iy) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti r Stressed	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (E	Living Root 4) ed Soils (C6)	Hydric Soil	Present? Indary Indicate Vater-Stained 4A, and 4B rainage Patte ry-Season W aturation Visite eomorphic Period hallow Aquita AC-Neutral Tealised Ant Mo	Yes No
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Surface Inundati Sparsel	Layer (if present): ches): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial Im y Vegetated Concave reations:	e required nagery (B7 Surface (B	; check all that appliance water-Star MLRA Salt Crust Aquatic In Hydrogen Oxidized In Presence Recent Inc Stunted on Other (Exp. 18)	iy) 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti r Stressed plain in Re	and 4B) es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (E	Living Root 4) ed Soils (C6)	Hydric Soil	Present? Indary Indicate Vater-Stained 4A, and 4B rainage Patte ry-Season W aturation Visite eomorphic Period hallow Aquita AC-Neutral Tealised Ant Mo	Yes No
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface High Water Mand Hy Sedime Drift Del Algal Mand Hy Iron Dep Surface Inundati Sparsel Field Obser Surface Water Surfa	Layer (if present): ches): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial In y Vegetated Concave vations: ter Present? Ye	e required nagery (B7 Surface (B	Check all that apply Water-Sta MLRA Salt Crust Aquatic In Hydrogen XOxidized I Presence Recent Iro Stunted or Other (Exp. 188)	ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti or Stressed plain in Re	es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (E emarks)	Living Root 4) ed Soils (C6)	Hydric Soil	Present? Indary Indicate Vater-Stained 4A, and 4B Irainage Patte Iry-Season W Indicate Patte Iry-Season W Ir	Yes No
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary India Surface L High Wa Saturati Water M Sedime Drift Del Algal Ma Iron Der Surface Inundati Sparsel	Layer (if present): ches): ches): drology Indicators: cators (minimum of on Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial In y Vegetated Concave vations: ter Present? Ye Present?	e required nagery (B7 Surface (B	; check all that appliance water-Star MLRA Salt Crust Aquatic In Hydrogen Oxidized In Presence Recent Inc Stunted on Other (Exp. 18)	iy) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce on Reducti r Stressed plain in Re	es (B13) dor (C1) eres along ed Iron (C ion in Tille Plants (E emarks)	Living Roof 4) ed Soils (C6) 01) (LRR A)	Hydric Soil	Present? Indary Indicate Vater-Stained 4A, and 4B rainage Patte ry-Season W aturation Visit ecomorphic Pe hallow Aquita AC-Neutral Te aised Ant Mo rost-Heave H	Yes No

Project/Site: Silver Reef Casino Mitigation Site					
Applicant/Owner: Silver Reef Casino / Lummi Nation	 			State: <u>WA</u> Sampling Point: <u>SP - 3</u>	
Investigator(s): Suzanne Anderson, Stephanie Smith, Fran					
Landform (hillslope, terrace, etc.):		Local relief	(concave,	convex, none): Slope (%):	
Subregion (LRR):A	_ Lat: _ <i>V</i>	48.7	897	Long: W -12Z . 6608 Datum:	
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 percent					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation No , Soil No , or Hydrology No	•			"Normal Circumstances" present? Yes X No	
Are Vegetation No , Soil No , or Hydrology No			(lf r	needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	sampling	g point l	ocations, transects, important features,	etc.
	lo				
1	lo	1	e Sampleo n a Wetla	<i>y</i>	
	lo				
Remarks:					
VEGETATION – Use scientific names of plan	te				
VEGETATION — Ose scientific fluines of plan	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size:)		Species?		Number of Dominant Species /	
1					(A)
2				Total Number of Dominant	•
3				Species Across All Strata:((B)
4				Percent of Dominant Species That Are OBL. FACW. or FAC: //O	
Sapling/Shrub Stratum (Plot size:)		_ = Total Cov	/er		(A/B)
1.				Prevalence Index worksheet:	
2				OBL species x 1 =	
3				FACW species x 2 =	
4				FAC species x 3 =	
5				FACU species x 4 =	
Herb Stratum (Plot size: 5' radius		_ = Total Cov	/er	UPL species x 5 =	
1. Schoenoplectus maritimus	70_	<u> </u>	DBL	Column Totals: (A)	(B)
2				Prevalence Index = B/A =	
3				Hydrophytic Vegetation Indicators:	
4				1 - Rapid Test for Hydrophytic Vegetation	
5				∠ 2 - Dominance Test is >50%	
6.				3 - Prevalence Index is ≤3.0 ¹	
7				4 - Morphological Adaptations ¹ (Provide suppodata in Remarks or on a separate sheet)	orting
8				5 - Wetland Non-Vascular Plants ¹	
9				Problematic Hydrophytic Vegetation ¹ (Explain))
11.				¹ Indicators of hydric soil and wetland hydrology mu	ıst
	70	_= Total Cov	ег	be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size:)					
1.				Hydrophytic Vegetation	
2		= Total Cov		Present? Yes No	
% Bare Ground in Herb Stratum <u>35-40</u>					
Remarks: filamentous algar 13 cor	ening	most o	of bar	re ground	
100000000000000000000000000000000000000)		,		

OIL				10:54 a			ampling Point:	SP - 🍼
Profile Desc	cription: (Describe to the	depth needed to	document the indicator	or confirm	the abse	ence of indicate	ors.)	
Depth	Matrix		Redox Features	Loc ²	T	_	D	
(inches)		6 Color (mois			Textur		Remarks	
0-1	6/ey 1 2.5/N				<u>Sand</u>	yolay		
1-16	Gley 1 2.5/N			·	Sand			····
								
							•	
Type: C=C	oncentration, D=Depletion,	, RM=Reduced Mat	rix, CS=Covered or Coat	ed Sand Gr	rains.	² Location: PL=	Pore Lining, M	=Matrix.
Hydric Soil	Indicators: (Applicable t	o all LRRs, unless	otherwise noted.)		lndi	cators for Prol	blematic Hydrid	c Soils*:
Histosol	` '	Sandy Re				2 cm Muck (A1	-	
	pipedon (A2)	Stripped I				Red Parent Ma		
	listic (A3)		ucky Mineral (F1) (excep	t MLRA 1)		Other (Explain	Dark Surface (TF	-12)
	en Sulfide (A4) d Below Dark Surface (A11	•	eyed Matrix (F2) Matrix (F3)			Other (Explain	in Remarks)	
	ark Surface (A12)		rk Surface (F6)		³ Ind	icators of hydro	phytic vegetatio	n and
	Mucky Mineral (S1)		Dark Surface (F7)	wetland hydrology must be present,				
_	Gleyed Matrix (S4)	Redox De	pressions (F8)		u	ınless disturbed	l or problematic.	•
Januy C								
	Layer (if present):		·					
Restrictive			 				.,	
Restrictive Type:	Layer (if present):					Soil Present?	Yes	No
Restrictive Type: Depth (in Remarks:	Layer (if present):					Soil Present?	Yes <u>K</u>	No
Restrictive Type: Depth (in Remarks:	Layer (if present): eches):					Soil Present?	Yes <u>K</u>	No
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy	Layer (if present): aches): OGY drology Indicators:		t annha)		Hydric			
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi	Layer (if present): aches): OGY rdrology Indicators: icators (minimum of one rec	quired; check all tha	,	nvent.	Hydric	econdary Indic	ators (2 or more	required)
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi	Layer (if present): aches): OGY ordrology Indicators: icators (minimum of one received)	quired; check all tha	er-Stained Leaves (B9) (except	Hydric	econdary Indica	ators (2 or more ed Leaves (B9)	required)
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface X_ High Ware	Cayer (if present): Coches): Coches): Coches): Coches (Coches): Coches (Coches)	quired; check all tha Wate	er-Stained Leaves (B9) (on ILRA 1, 2, 4A, and 4B)	except	Hydric	econdary Indica Water-Staine	ators (2 or more ed Leaves (B9) 4B)	required)
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi Surface X_ High Watter Saturati	Layer (if present): aches): drology Indicators: icators (minimum of one receive Water (A1) ater Table (A2) ion (A3)	quired; check all tha Wate Salt	er-Stained Leaves (B9) (ILRA 1, 2, 4A, and 4B) Crust (B11)	except	Hydric	econdary Indica Water-Staind 4A, and 4 Drainage Pa	ators (2 or more ed Leaves (B9) 4B) uterns (B10)	required) (MLRA 1, 2
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary IndiSurface X_High Water Mater Mate	Layer (if present): pches): pdfy rdrology Indicators: cators (minimum of one receive Water (A1) ater Table (A2) cion (A3) Marks (B1)	quired; check all tha Wate Wate Salt Aqua	er-Stained Leaves (B9) (on ILRA 1, 2, 4A, and 4B) Crust (B11) atic Invertebrates (B13)	except	Hydric	econdary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season	ators (2 or more ed Leaves (B9) 4B) utterns (B10) Water Table (C	required) (MLRA 1, 2
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi Surface X_ High Water M Sedime	Layer (if present): aches): drology Indicators: cators (minimum of one receive Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)	quired; check all tha Wate Sait Aqua	er-Stained Leaves (B9) (c ILRA 1, 2, 4A, and 4B) Crust (B11) atic Invertebrates (B13) cogen Sulfide Odor (C1)		Hydric S	econdary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation V	ators (2 or more ed Leaves (B9) 4B) itterns (B10) Water Table (C isible on Aerial	required) (MLRA 1, 2
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De	Layer (if present): aches): cody rdrology Indicators: cators (minimum of one receive Water (A1) ater Table (A2) ion (A3) Marks (B1) and Deposits (B2) posits (B3)	quired; check all tha Wate Salt Aqua Hydr Oxid	er-Stained Leaves (B9) (e ILRA 1, 2, 4A, and 4B) Crust (B11) atic Invertebrates (B13) rogen Sulfide Odor (C1) ized Rhizospheres along	Living Roo	Hydric S	econdary Indicates Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation V Geomorphic	ators (2 or more ed Leaves (B9) 4B) htterns (B10) Water Table (C isible on Aerial Position (D2)	required) (MLRA 1, 2
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface X High Water M Sedime Drift De Algal Marene	Layer (if present): aches): drology Indicators: cators (minimum of one receive Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)	quired; check all tha Wate Wate Aqua Hydr Oxid Pres	er-Stained Leaves (B9) (c ILRA 1, 2, 4A, and 4B) Crust (B11) atic Invertebrates (B13) cogen Sulfide Odor (C1)	Living Roo 4)	Hydric S ots (C3)	econdary Indica Water-Staine 4A, and 4 Drainage Pa Dry-Season Saturation V	ators (2 or more ed Leaves (B9) 4B) itterns (B10) Water Table (C isible on Aerial Position (D2) ittard (D3)	required) (MLRA 1, 2
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi Surface X High Wi X Saturati Water M Sedime Drift De Algal Mi	Layer (if present): aches): ches): ches): ches): ches): ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ches ch	quired; check all tha Wate N Salt Aqua Hydr Oxid Pres Rece	er-Stained Leaves (B9) (contract of the stained Leaves (B9) (contract of the stained Leaves (B11) (contract of the stained Leaves (B13) (contract	Living Roo 4) ed Soils (C6	Hydric S obts (C3)	econdary Indicate Water-Stains 4A, and 4 Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutra	ators (2 or more ed Leaves (B9) 4B) itterns (B10) Water Table (C isible on Aerial Position (D2) ittard (D3)	required) (MLRA 1, 2 2) Imagery (CS
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary IndiSurface X_High Water Mater Mate	Aches): OGY Ordrology Indicators: Cators (minimum of one receive Water (A1) ater Table (A2) cion (A3) Marks (B1) cont Deposits (B2) cposits (B3) at or Crust (B4) posits (B5)	quired; check all tha Wate N Salt Aqua Oxid Pres Rece Stun	er-Stained Leaves (B9) (control of the ILRA 1, 2, 4A, and 4B) Crust (B11) atic Invertebrates (B13) regen Sulfide Odor (C1) ized Rhizospheres along ence of Reduced Iron (Cent Iron Reduction in Tille	Living Roo 4) ed Soils (C6	Hydric S obts (C3)	econdary Indicate Water-Stains 4A, and a Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutrai Raised Ant I	ators (2 or more ed Leaves (B9) 4B) itterns (B10) Water Table (C isible on Aerial Position (D2) ittard (D3) Test (D5)	e required) (MLRA 1, 2 2) Imagery (CS
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface X. High Wi X. Saturati Water M Sedime Drift De Algal M Iron De Surface Inundati	Layer (if present): aches): drology Indicators: cators (minimum of one receive Water (A1) ater Table (A2) con (A3) Marks (B1) ant Deposits (B2) cposits (B3) at or Crust (B4) posits (B5) a Soil Cracks (B6)	quired; check all tha Wate N Salt Aqua K Hydr Oxid Pres Rece Stun	er-Stained Leaves (B9) (control of the ILRA 1, 2, 4A, and 4B) Crust (B11) atic Invertebrates (B13) regen Sulfide Odor (C1) ized Rhizospheres along ence of Reduced Iron (Count Iron Reduction in Tille ted or Stressed Plants (I	Living Roo 4) ed Soils (C6	Hydric S obts (C3)	econdary Indicate Water-Stains 4A, and a Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutrai Raised Ant I	ators (2 or more ed Leaves (B9) 4B) tterns (B10) Water Table (C isible on Aerial Position (D2) titard (D3) I Test (D5)	required) (MLRA 1, 2 2) Imagery (CS
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary IndiSurface High Water M Sedime Drift De Algal Maliron Del Surface Inundat Sparsel	Cayer (if present): Inches): Inche	quired; check all tha Wate N Salt Aqua K Hydr Oxid Pres Rece Stun	er-Stained Leaves (B9) (control of the ILRA 1, 2, 4A, and 4B) Crust (B11) atic Invertebrates (B13) regen Sulfide Odor (C1) ized Rhizospheres along ence of Reduced Iron (Count Iron Reduction in Tille ted or Stressed Plants (I	Living Roo 4) ed Soils (C6	Hydric S obts (C3)	econdary Indicate Water-Stains 4A, and a Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutrai Raised Ant I	ators (2 or more ed Leaves (B9) 4B) tterns (B10) Water Table (C isible on Aerial Position (D2) titard (D3) I Test (D5)	required) (MLRA 1, 2 2) Imagery (CS
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface X. High Water M Sedime Drift De Algal Material Iron De Surface Inundat Sparsel Field Obser	Layer (if present): aches): aches):	quired; check all that Wate N Salt Aqua Are Pres Rece Stun ry (B7) Other ace (B8)	er-Stained Leaves (B9) (ell-RA 1, 2, 4A, and 4B) Crust (B11) atic Invertebrates (B13) rogen Sulfide Odor (C1) ized Rhizospheres along ence of Reduced Iron (Cent Iron Reduction in Tille ted or Stressed Plants (Explain in Remarks) oth (inches):	Living Roo 4) ed Soils (C6 01) (LRR A)	Hydric S obts (C3)	econdary Indicate Water-Stains 4A, and a Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutrai Raised Ant I	ators (2 or more ed Leaves (B9) 4B) tterns (B10) Water Table (C isible on Aerial Position (D2) titard (D3) I Test (D5)	e required) (MLRA 1, 2, 2) Imagery (CS
Restrictive Type: Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface X High Water Now Sedime Drift De Algal Mater Now Iron De Surface Inundat Sparsel Field Obser	Layer (if present): aches): drology Indicators: icators (minimum of one receive Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4) posits (B5) at or Crust (B4) posits (B5) at or Crust (B6) ion Visible on Aerial Image by Vegetated Concave Surfarvations: ter Present? Yes X	quired; check all that Wate N Salt Aqua Are Pres Rece Stun ry (B7) Other ace (B8)	er-Stained Leaves (B9) (er LRA 1, 2, 4A, and 4B) Crust (B11) atic Invertebrates (B13) rogen Sulfide Odor (C1) ized Rhizospheres along ence of Reduced Iron (Cent Iron Reduction in Tille ted or Stressed Plants (Der (Explain in Remarks)	Living Roo 4) ed Soils (C6 01) (LRR A)	Hydric S obts (C3)	econdary Indicate Water-Stains 4A, and a Drainage Pa Dry-Season Saturation V Geomorphic Shallow Aqu FAC-Neutrai Raised Ant I	ators (2 or more ed Leaves (B9) 4B) tterns (B10) Water Table (C isible on Aerial Position (D2) titard (D3) I Test (D5)	e required) (MLRA 1, 2, 2) Imagery (CS

sman puddles of standing water 1/2"-1" deep all around data plot

Remarks:

Project/Site: Silver Reef Casino Mitigation Site	City/	County: Whatcon	County Sampling Date: 6/1/2011
Applicant/Owner: Silver Reef Casino / Lummi Nation			State: <u>WA</u> Sampling Point: <u>SP - 4</u>
Investigator(s): Suzanne Anderson, Stephanie Smith, Frank			
Landform (hillslope, terrace, etc.):			
Subregion (LRR): A			
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 percent			
Are climatic / hydrologic conditions on the site typical for this		•	
Are Vegetation No , Soil No , or Hydrology No s			"Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No n			eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map s			
Hydrophytic Vegetation Present? Yes X No			
· · · · · · · · · · · · · · · · · · ·		is the Sampled	V
Wetland Hydrology Present? Yes X No		within a Wetlan	10? Yes _/\ NO
Remarks: located in Low marsh			
• • • • • • • • • • • • • • • • • • • •			
VECETATION III			
VEGETATION – Use scientific names of plants			Total and the state of the stat
· · · · · · · · · · · · · · · · · · ·		ominant Indicator secies? Status	Dominance Test worksheet: Number of Dominant Species
1			That Are OBL, FACW, or FAC: (A)
2			Total Number of Dominant
3			Species Across All Strata: (B)
4			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size:)	=T	otal Cover	That Are OBL, FACW, or FAC:
1			Prevalence Index worksheet:
2			Total % Cover of: Multiply by:
3.			OBL species x 1 =
4			FACW species x 2 = FAC species x 3 =
5.			FACU species x4 =
Herb Stratum (Plot size: 5' radius)	=T	otal Cover	UPL species x 5 =
1. DISTICULIS SPICATA	75	Y FACW	Column Totals: (A) (B)
2. Tuncus balticus		N FACW+	Prevalence Index = B/A =
3			Hydrophytic Vegetation Indicators:
4.			1 - Rapid Test for Hydrophytic Vegetation
5			X 2 - Dominance Test is >50%
6			3 - Prevalence Index is ≤3.0 ¹
7			4 - Morphological Adaptations (Provide supporting
8			data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹
9			Problematic Hydrophytic Vegetation¹ (Explain)
10.			¹Indicators of hydric soil and wetland hydrology must
11	$\frac{-90}{}$ = T	otal Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)		otal cover	
1			Hydrophytic
2			Vegetation Present? Yes X No
% Bare Ground in Herb Stratum	= T	otal Cover	100 /-
Remarks:			

Prome Desc	cription: (Describe	to the depth n	eeded to docur	ment the	indicator	or confir	n the absence of indicators.)			
Depth	Matrix			x Feature						
(inches)	Color (moist)	<u> % C</u>	Color (moist)	%	_Type¹	_Loc ²			Re	emarks
0-20	G/ey1 2.5/	N					Clay Si	and_		·
	1						0			
		· ——		_						
		·								
		,			- ——		-			
					. —			· ·		
	oncentration, D=Dep					ed Sand G	Brains.			Lining, M=Matrix. tic Hydric Soils ³ :
	Indicators: (Applic				.ea.)					nic nyuric sons :
Histosol			Sandy Redox (Stripped Matrix					2 cm Muck	ఁ (A10) it Material i	(TE2)
	pipedon (A2) istic (A3)		Loamy Mucky I	• ,	1) (evcen	€MIRA 1				urface (TF12)
	en Sulfide (A4)		Loamy Gleyed	•		L INILION I		-	olain in Rer	
	d Below Dark Surfac		Depleted Matrix		" /			(
	ark Surface (A12)		Redox Dark Su)		³ India	cators of h	ydrophytic	vegetation and
	Mucky Mineral (S1)		Depleted Dark	Surface (I	- 7)		wetland hydrology must be present,			
Sandy 0	Gleyed Matrix (S4)		Redox Depress	sions (F8)			ur	nless distu	irbed or pro	oblematic.
	Layer (if present):									
Restrictive	Layer (if present):		_							3.4
Restrictive Type: Depth (in							Hydric S	Soil Prese	ent? Yes	s <u>X</u> No
Restrictive Type: Depth (in Remarks:	oches):		-				Hydric S	Soil Prese	ent? Yes	s <u>X</u> No
Restrictive Type: Depth (in Remarks:	oches):		-				Hydric S	Soil Prese	ent? Yes	s <u>X</u> No_
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy	OGY		-						:	
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi	OGY rdrology Indicators: cators (minimum of o		eck all that appl					econdary I	ndicators (2 or more required
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi	OGY rdrology Indicators: cators (minimum of o		eck all that appl	ined Leav		except		econdary I	ndicators (
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi X Surface High Wa	OGY rdrology Indicators: cators (minimum of o		eck all that appl Water-Sta MLRA	ined Leav 1, 2, 4A,		except		econdary I Water-S 4A, a	ndicators (Stained Lea and 4B)	'2 or more required aves (B9) (MLRA
Type:	oches):		eck all that appl Water-Sta MLRA Salt Crust	ined Leav 1, 2, 4A , (B11)	and 4B)	except		econdary I _ Water-S 4A, a _ Drainag	ndicators (Stained Lea and 4B) se Patterns	'2 or more required aves (B9) (MLRA '
Type:	ordes):		eck all that appl Water-Sta MLRA Salt Crust Aquatic In	ined Leav 1, 2, 4A, (B11) vertebrate	and 4B) es (B13)	except		econdary I Water-S 4A, a Drainag Dry-Sea	ndicators (Stained Lea and 4B) se Patterns ason Water	'2 or more required aves (B9) (MLRA (B10) r Table (C2)
Type:	ordrology Indicators: cators (minimum of ore Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)		eck all that appl Water-Sta MLRA Salt Crust Aquatic In	ined Leav 1, 2, 4A , (B11) vertebrate Sulfide O	and 4B) es (B13) edor (C1)		Se	econdary I Water-S 4A, a Drainag Dry-Sea Saturati	ndicators (Stained Lea and 4B) le Patterns ason Water on Visible	2 or more required aves (B9) (MLRA (B10) r Table (C2) on Aerial Imagery
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi X Surface X High Water M Sedime Drift De	ordes):		eck all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F	nined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe	and 4B) es (B13) edor (C1) eres along	Living Ro	Se	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomo	ndicators (Stained Lea and 4B) se Patterns ason Water on Visible rphic Positi	2 or more required aves (B9) (MLRA : (B10) r Table (C2) on Aerial Imagery ion (D2)
Restrictive Type: Depth (in Remarks: YDROLO Wettand Hy Primary Indi X Surface X High Water Mark Sedime Drift De Algal M	ordes):		eck all that appl Water-Sta MLRA Salt Crust Aquatic In K Hydrogen Oxidized F	ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduce	and 4B) es (B13) edor (C1) eres along ed Iron (C-	Living Ro 4)	Se	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomoi Shallow	ndicators (Stained Lea and 4B) e Patterns ason Water on Visible rphic Positi	2 or more required aves (B9) (MLRA (B10) r Table (C2) on Aerial Imagery ion (D2)
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi X Surface X High W: Saturati Water M Sedime Drift De Algal M Iron De	ordes):		eck all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	nined Leave 1, 2, 4A, (B11) evertebrate Sulfide O Rhizosphe of Reduct	and 4B) es (B13) edor (C1) eres along ed Iron (C- ion in Tille	Living Ro 4) d Soils (C	<u>Se</u>	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomoi Shallow FAC-Ne	ndicators (Stained Lea and 4B) se Patterns ason Water on Visible rphic Positi v Aquitard (autral Test	2 or more required aves (B9) (MLRA 19) (B10) r Table (C2) on Aerial Imagery ion (D2) (D3) (D5)
Type:	ordes):	ne required; ch	eck all that appl Water-Sta MLRA Salt Crust Aquatic In Widted F Presence Recent Irc	ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressec	and 4B) es (B13) edor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Ro 4) d Soils (C	<u>Se</u>	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomor Shallow FAC-Ne	ndicators (Stained Lea and 4B) se Patterns ason Water on Visible rphic Positi r Aquitard (eutral Test Ant Mound	2 or more required aves (B9) (MLRA 1974) (B10) Table (C2) on Aerial Imagery ion (D2) (D3) (D5) is (D6) (LRR A)
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi X Surface X High W: Sedime Drift De Algal M: Iron De; Surface Inundat	ordrology Indicators: cators (minimum of ore Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4) posits (B5) is Soil Cracks (B6) ion Visible on Aerial I	ne required; ch	eck all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Leav 1, 2, 4A, (B11) vertebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressec	and 4B) es (B13) edor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Ro 4) d Soils (C	<u>Se</u>	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomor Shallow FAC-Ne	ndicators (Stained Lea and 4B) se Patterns ason Water on Visible rphic Positi r Aquitard (eutral Test Ant Mound	2 or more required aves (B9) (MLRA 19) (B10) r Table (C2) on Aerial Imagery ion (D2) (D3) (D5)
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi X Surface X High Wi Z Saturati Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel	ordrology Indicators: Cators (minimum of ore Water (A1) Inter Table (A2) Int Deposits (B2) Int Deposits (B3) Int or Crust (B4) Int Ordrology Indicators: Inter Table (A2) Inter Table (A2) Inter Table (A2) Inter Table (B2) Inter Table (B2) Inter Table (B2) Inter Table (B3) Inter Table (B4) Inter	ne required; ch	eck all that appl Water-Sta MLRA Salt Crust Aquatic In Widted F Presence Recent Irc	ined Leaven. 1, 2, 4A, (B11) evertebrate Sulfide ORhizosphe of Reduction Reductor Stressed	and 4B) es (B13) edor (C1) eres along ed Iron (C- ion in Tille I Plants (D- emarks)	Living Ro 4) d Soils (C	<u>Se</u>	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomor Shallow FAC-Ne	ndicators (Stained Lea and 4B) se Patterns ason Water on Visible rphic Positi r Aquitard (eutral Test Ant Mound	2 or more required aves (B9) (MLRA 1974) (B10) Table (C2) on Aerial Imagery ion (D2) (D3) (D5) is (D6) (LRR A)
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi X Surface X High W: Yoter N Sedime Drift De Algal M. Iron De; Surface Inundat Sparsel Field Obser	order of the control	magery (B7)	water-Sta Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	tined Leave 1, 2, 4A, (B11) evertebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed plain in Re	and 4B) es (B13) edor (C1) eres along ed Iron (C- ion in Tille I Plants (D- emarks)	Living Ro 4) d Soils (C 01) (LRR A	<u>Se</u>	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomor Shallow FAC-Ne	ndicators (Stained Lea and 4B) se Patterns ason Water on Visible rphic Positi r Aquitard (eutral Test Ant Mound	2 or more required aves (B9) (MLRA 1974) (B10) Table (C2) on Aerial Imagery ion (D2) (D3) (D5) is (D6) (LRR A)
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi X Surface X High W: Y Saturati Water N Sedime Drift De Algal M Iron De; Surface Inundat Sparsel Field Obser	order inches):	magery (B7) e Surface (B8)	water-Sta Water-Sta MLRA Salt Crust Aquatic In K Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	nined Leaven 1, 2, 4A, (B11) evertebrate ORhizospher of Reduction Reductor Stressed plain in Reductor	and 4B) es (B13) edor (C1) eres along ed Iron (C- ion in Tille I Plants (D- emarks)	Living Ro 4) d Soils (C 01) (LRR A	<u>Se</u>	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomor Shallow FAC-Ne	ndicators (Stained Lea and 4B) se Patterns ason Water on Visible rphic Positi r Aquitard (eutral Test Ant Mound	2 or more required aves (B9) (MLRA 1974) (B10) Table (C2) on Aerial Imagery ion (D2) (D3) (D5) is (D6) (LRR A)
Restrictive Type: Depth (in Remarks: YDROLO Wetland Hy Primary Indi X Surface X High W: Y Saturati Water N Sedime Drift De Algal M Iron De; Surface Inundat Sparsel Field Obser	order inches):	magery (B7) e Surface (B8) es No _ es No _	eck all that appl Water-Sta MLRA Salt Crust Aquatic In Video Presence Recent Irc Stunted or Other (Exp	tined Leav. 1, 2, 4A, (B11) vertebrate Sulfide Of Rhizosphe of Reduct on Reduct or Stressed plain in Re sches):	es (B13) els (C1) eres along ed Iron (C- ion in Tille I Plants (Demarks) UFACE MUFACE MUFACE	Living Ro 4) d Soils (C 01) (LRR A	Seconds (C3)	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomoi Shallow FAC-Ne Raised	ndicators (Stained Lea and 4B) he Patterns ason Water on Visible rphic Positi Aquitard (butral Test Ant Mound eave Humi	(2 or more required aves (B9) (MLRA of the CP) (B10) on Aerial Imagery (D3) (D5) ds (D6) (LRR A) mocks (D7)
Restrictive Type:	ordrology Indicators: Cators (minimum of ore Water (A1) Inter Table (A2) Inter Deposits (B2) Inter Deposits (B3) Inter Order (B4) Inter Order	magery (B7) e Surface (B8) es No _ es No _	water-Sta Water-Sta MLRA Salt Crust Aquatic In K Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	tined Leav. 1, 2, 4A, (B11) vertebrate Sulfide Of Rhizosphe of Reduct on Reduct or Stressed plain in Re sches):	es (B13) els (C1) eres along ed Iron (C- ion in Tille I Plants (Demarks) UFACE MUFACE MUFACE	Living Ro 4) d Soils (C 01) (LRR A	<u>Se</u>	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomoi Shallow FAC-Ne Raised	ndicators (Stained Lea and 4B) he Patterns ason Water on Visible rphic Positi Aquitard (butral Test Ant Mound eave Humi	(2 or more required aves (B9) (MLRA of the CP) (B10) on Aerial Imagery (D3) (D5) ds (D6) (LRR A) mocks (D7)
Restrictive Type: Depth (in Remarks: YDROLO Vettand Hy Primary Indi X Surface X High W: X Saturati Water M Sedime Drift De Algal M: Iron De; Surface Inundat Sparsel Field Obser Surface Water Table Saturation Fincludes ca	ordes): orderology Indicators: cators (minimum of ore water (A1) ater Table (A2) ion (A3) Marks (B1) ion Deposits (B2) iposits (B3) at or Crust (B4) posits (B5) is Soil Cracks (B6) ion Visible on Aerial If y Vegetated Concave rvations: ter Present? Y Present? Y	imagery (B7) e Surface (B8) es X No _ es X No _	eck all that appl Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	tined Leaven 1, 2, 4A, (B11) evertebrate Sulfide Of Reduction Reductor Stressed plain in Reductor Stre	and 4B) es (B13) edor (C1) eres along ed Iron (C- ion in Tille I Plants (Demarks) Urface urface	Living Ro 4) d Soils (C 01) (LRR A	Sectors (C3)	econdary I Water-S 4A, a Drainag Dry-Sea Saturati Geomoi Shallow FAC-Ne Raised Frost-He	ndicators (Stained Lea and 4B) he Patterns ason Water on Visible rphic Positi Aquitard (butral Test Ant Mound eave Humi	(2 or more required aves (B9) (MLRA of the CP) (B10) on Aerial Imagery (D3) (D5) ds (D6) (LRR A) mocks (D7)

Project/Site: Silver Reef Casino Mitigation Site	(City/County:	Whatcom	County Sampling Date: 6/1/2011			
Applicant/Owner: Silver Reef Casino / Lummi Nation				State: <u>WA</u> Sampling Point: <u>SP - 5</u>			
Investigator(s): Suzanne Anderson, Stephanie Smith, Frank Lawrence, Monika Lange Section, Township, Range: Section 14 / T 38 N / R 1E							
Landform (hillslope, terrace, etc.):		Local relief (concave, c	onvex, none): Slope (%):			
Subregion (LRR): A	Lat: <u>//</u>	48. 78	97	Long: W -122.6608 Datum:			
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 perce							
Are climatic / hydrologic conditions on the site typical for the							
Are Vegetation No , Soil No , or Hydrology No	_ significantly	/ disturbed?	Are	"Normal Circumstances" present? Yes X No			
Are Vegetation No , Soil No , or Hydrology No	_ naturally pr	oblematic?	(If ne	eeded, explain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map	showing	sampling	point lo	ocations, transects, important features, etc.			
Hydrophytic Vegetation Present? Yes _X	No						
V	No		Sampled a Wetlan	V			
7 07	No	Within	a wecuan	165 110 110			
Remarks:							
VEGETATION – Use scientific names of pla	nts.						
		Dominant I		Dominance Test worksheet:			
Tree Stratum (Plot size:)		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)			
1				That Are OBL, FACW, or FAC: (A)			
3				Total Number of Dominant Species Across All Strata: (B)			
4.			i	,			
		= Total Cov		Percent of Dominant Species That Are OBL, FACW, or FAC:			
Sapling/Shrub Stratum (Plot size: 5/radius)			EAA	Prevalence Index worksheet:			
1. Alnus rubra			740	Total % Cover of: Multiply by:			
2				OBL species x 1 =			
3				FACW species x 2 =			
5.				FAC species x 3 =			
	5	= Total Cov	ər	FACU species x 4 =			
Herb Stratum (Plot size: 5 radius)	<i>-سر (د</i>	N.	E-10.1	UPL species x 5 =			
1. Aster subspicatus	_ 25	<u> </u>	FACW	Column Totals: (A) (B)			
2. Agrostis Stolonykra 3. Trifolium repens			FAC_	Prevalence Index = B/A =			
4. Distichlis spicata	_ <u>10</u>		FACW	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation			
5. Holcus lanatus	5		FAC	2 - Dominance Test is >50%			
6. Juneus halthous	45		FACW	3 - Prevalence Index is ≤3.0¹			
7. Lactuca Serriola	<u><5</u>		'N/	4 - Morphological Adaptations¹ (Provide supporting			
8. Potentilla anserina	TR	N	BL_	data in Remarks or on a separate sheet)			
9. Vicia sp.	_TR_	. <u>//</u> .		5 - Wetland Non-Vascular Plants ¹			
10. Tanacétum vulgare	_ <u>(/5)</u> _	<u>~</u> .	N1	Problematic Hydrophytic Vegetation¹ (Explain)			
11.	— — —			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Woody Vine Stratum (Plot size: 5 radius)	65	_= Total Cove	er				
1. Rubus armeniacus	5	У	FACU	Hydrophytic			
2.				Vegetation			
	5	= Total Cove	er —	Present? Yes No			
% Bare Ground in Herb Stratum 5 1/.							
Remarks: <i>MOSS = 351</i> .							
}							

SOIL		Hde	approx.	1/2 W	ay ou	t Ca	2)1:56am	
Profile Desc	cription: (Describe	to the depth ne	eded to docum	ent the i	ndicator	or confirm		
Depth	Matrix (Control of the control of th			Features		12	Tastin-	Demonto
(inches)	Color (moist)		olor (moist)		_Type ¹	Loc²	<u>Texture</u>	Remarks
0-18	2.5 y 3/1		54R4/4		<u> </u>	MIPL	Sand.	,
14.2.	(1, 1, 2, 5)							
18-22	6/ey 1 2.5/n	<u> </u>					<u>Sanou</u>	
•								
		<u> </u>						
							<u></u>	
	oncentration, D=Dep					ed Sand Gi		ation: PL=Pore Lining, M=Matrix.
	Indicators: (Applic				ed.)			s for Problematic Hydric Soils ³ :
Histoso	` '		Sandy Redox (S					Muck (A10)
	pipedon (A2) istic (A3)		Stripped Matrix Loamy Mucky IV		l) (ovcen	4 MI DA 1\		Parent Material (TF2) Shallow Dark Surface (TF12)
· 	en Sulfide (A4)		Loamy Gleyed N			LIVILITA I)	-	r (Explain in Remarks)
	d Below Dark Surfac		Depleted Matrix		,			
Thick D	ark Surface (A12)	_	Redox Dark Sur	face (F6)				s of hydrophytic vegetation and
	Mucky Mineral (S1)		Depleted Dark S	•	7)			d hydrology must be present,
	Gleyed Matrix (S4)		Redox Depressi	ons (F8)			unless	disturbed or problematic.
	Layer (if present):							•
Type:							Hudric Soil I	Present? Yes X No
Depth (in	ome oxidiz						1134110 00	1000112. 1001101
HYDROLC)GY							
-	drology Indicators						•	
	icators (minimum of o	one required; che			(DO) (-			dary Indicators (2 or more required)
	Water (A1)		Water-Stai			except	vv:	ater-Stained Leaves (B9) (MLRA 1, 2,
X Saturati	ater Table (A2)			I, 2, 4A , ∂	inu 46)		Dr	4A, and 4B) ainage Patterns (B10)
	Marks (B1)		Salt Crust		s (B13)			y-Season Water Table (C2)
	ent Deposits (B2)		Hydrogen					uturation Visible on Aerial Imagery (C9)
Drift De						Living Roo		eomorphic Position (D2)
	at or Crust (B4)		Presence of	•	•	_		nallow Aquitard (D3)
	posits (B5)		Recent Iro	n Reducti	on in Tille	ed Soils (Ce	6) FA	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted or	Stressed	Plants (E	01) (LRR A	i) Ra	aised Ant Mounds (D6) (LRR A)
Inundat	ion Visible on Aerial	Imagery (B7)	Other (Exp	lain in Re	emarks)		Fr	ost-Heave Hummocks (D7)
Sparse	ly Vegetated Concav	e Surface (B8)						
Field Obse			V					
Surface Wa	ter Present?	/es No _	Depth (ind	ches):	2 II			
Water Table	Present?	res X No _	Depth (inc	ches): <u>i -</u>	ار ان ا			V
Saturation F	Present? pillary fringe)	∕es <u> </u>	Depth (inc	ches):	2	Wetl	land Hydrology	Present? Yes X No
Describe Re	ecorded Data (strean	n gauge, monitor	ing well, aerial p	hotos, pr	evious in	spections),	if available:	

Remarks:	Standina	cirates 1.	+ 1811		:			
i	standing	www a	0 10					
	•							
į								

Project/Site: Silver Reef Casino Mitigation Site	(City/County	r Whatcon	n County	Sampling Date: 6	6/1/2011
Applicant/Owner: Silver Reef Casino / Lummi Nation						,
Investigator(s): Suzanne Anderson, Stephanie Smith, Fran						
Landform (hillslope, terrace, etc.):						
Subregion (LRR):A						
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 perce						
Are climatic / hydrologic conditions on the site typical for the						
Are Vegetation No , Soil No , or Hydrology No				"Normal Circumstance		No
Are Vegetation No , Soil No , or Hydrology No	naturally pr	oblematic?	(If n	eeded, explain any ans	swers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point lo	ocations, transec	ts, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes N	10					
Hydric Soil Present? Yes 1	40 <u>X</u>	ls th	ne Sampled	Area d? Yes	No X	
Wetland Hydrology Present? Yes						
Remarks: located at the highest	- eleva	tion.	at the	e southene	(
of the east berm						
VEGETATION – Use scientific names of plan	nts.					
		Dominan	Indicator	Dominance Test wo	orksheet:	
Tree Stratum (Plot size:) 1	% Cover			Number of Dominant That Are OBL, FACV	•	(A)
2.				Total Number of Dom	ninant a	
3				Species Across All S	trata:	(B)
4				Percent of Dominant	Species	
0 1 10 1 0 (((()))		= Total Co	over	That Are OBL, FACV	V, or FAC: 100	(A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index w	orksheet:	
1. 2.				Total % Cover of	f: Multiply	y by:
3.				OBL species		
4.				FACW species		
5.				FAC species		
C'		= Total C	over	FACU species		
Herb Stratum (Plot size: 5'radius)	56	У	EM	UPL species Column Totals:		
1. Trifolium repens 2. Agrostis stolonifera	- 25		FAC	Ootariii Fotalo.		(
3. Holcus lanatus			FAC		ex = B/A =	
4. Epilopum ciliatum		\sqrt{N}	FACW-	Hydrophytic Vegeta 1 - Rapid Test fo		ation
5				X 2 - Dominance T		RIOH
6.				3 - Prevalence Ir		
7				4 - Morphologica	al Adaptations¹ (Provi	
8				5 - Wetland Non		Silecti
9				i	Irophytic Vegetation ¹	(Explain)
10.				¹ Indicators of hydric		
11	77.4	= Total Co	ver	be present, unless di	isturbed or problema	tic.
Woody Vine Stratum (Plot size:)						
1				Hydrophytic		
2				Vegetation Present?	Yes No	
% Bare Ground in Herb Stratum <u>bare ground</u> + n	nacc. n	= Total Co	ver			
Remarks:	w33 = 2	<u> </u>				

Sampling Point:	SP -	6	_

C	^	ł	ł
J	v	ł	L

Profile Des	cription: (Describe to	o the depth	neede	d to docun	nent the	indicator	or confirm	m the absence of indicators.)	
Depth	Matrix				x Feature	s			
(inches)	Color (moist)	<u> </u>		(moist)	<u>%</u>		Loc ²	Texture Remarks	
0-13	2.5 y 3/1		5 yr	4/6	_/	<u> </u>	<u> M</u>	<u>Sand</u>	_
13-22	Gley1 2.5/N		5 yr	4/6	7	C	M	sand	
			-						
	oncentration, D=Deple						d Sand G		
	Indicators: (Applica	pie to all L				tea.)		Indicators for Problematic Hydric Soils ³ :	
Histoso	r (A1) pipedon (A2)	-		dy Redox (S oped Matrix		•		2 cm Muck (A10) Red Parent Material (TF2)	
	istic (A3)	-		ny Mucky N		1) (except	MLRA 1)	· · · · · · · · · · · · · · · · · · ·	
	en Sulfide (A4)	***		my Gleyed I				Other (Explain in Remarks)	
	d Below Dark Surface	(A11)		leted Matrix		,			
	ark Surface (A12)			ox Dark Su	•	•		³ Indicators of hydrophytic vegetation and	
; — ·	Mucky Mineral (S1)			leted Dark S	-	-		wetland hydrology must be present,	
	Gleyed Matrix (S4)		Red	ox Depress	ions (F8)			unless disturbed or problematic.	
	Layer (if present):								
1									
Remarks:	ches):							Hydric Soil Present? Yes No X	
HYDROLO)GY								
Wetland Hy	drology Indicators:					·			
Primary Indi	cators (minimum of or	e required;	check a	all that appl	y)			Secondary Indicators (2 or more required)	
Surface	Water (A1)			Water-Stai	ined Leav	/es (B9) (e :	xcept	Water-Stained Leaves (B9) (MLRA 1, 2	<u>),</u>
High W	ater Table (A2)			MLRA	1, 2, 4A,	and 4B)		4A, and 4B)	
Saturati	ion (A3)			Salt Crust	(B11)			Drainage Patterns (B10)	
Water N	/larks (B1)			Aquatic Inv	vertebrate	es (B13)		Dry-Season Water Table (C2)	
Sedime	nt Deposits (B2)			Hydrogen	Sulfide C	dor (C1)		Saturation Visible on Aerial Imagery (C	9)
Drift De	posits (B3)			Oxidized F	Rhizosphe	eres along	Living Roo	ots (C3) Geomorphic Position (D2)	
Algal M	at or Crust (B4)			Presence			-	Shallow Aquitard (D3)	
Iron De				Recent Iro				,	
	Soil Cracks (B6)			Stunted or			1) (LRR A		
	ion Visible on Aerial In	, ,	_	Other (Exp	olain in Ro	emarks)		Frost-Heave Hummocks (D7)	
	y Vegetated Concave	Surface (B	Ď)						
Field Obser			X	_ Depth (in				:	
							-		
Water Table	Present? Ye	s_ <u>~</u> N	۰	_ Depth (inc	ches): _/	2"	-		
Saturation F	'resent? Ye pillary fringe)	s_X_N	۰	_ Depth (inc	ches): <u>/</u>	<u> </u>	Weti	land Hydrology Present? Yes No	_
	ecorded Data (stream (gauge, mor	nitoring v	well, aerial p	ohotos, p	revious ins	pections),	, if available:	
Remarks:									
1									

Project/Site: Silver Reef Casino Mitigation Site	City/County: Whatcom County Sampling Date: 6/1/2011
Applicant/Owner: Silver Reef Casino / Lummi Nation	State: <u>WA</u> Sampling Point: <u>SP - 7</u>
	Lawrence, Monika Lange Section, Township, Range: Section 14 / T 38 N / R 1E
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Slope (%):
	Lat: N . 48 . 7897 Long: W -122 . 6608 Datum:
	t slopes NWI classification: Not listed
	time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No :	
Are Vegetation No , Soil No , or Hydrology No	
	showing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes _ X No)
	ls the Sampled Area within a Wetland? Yes No
Wetland Hydrology Present? Yes V No	·
Remarks: located on south bery	n, east of SP-6 in 10'-15' wide strip.
VEGETATION – Use scientific names of plant	S.
	Absolute Dominant Indicator Dominance Test worksheet:
	% Cover Species? Status Number of Dominant Species That Are ORL FACW or FAC:
1	
2. 3.	Total (diliber of Dominant
4	
	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size:)	Prevalence Index worksheet:
1. 2.	Total % Cover of: Multiply by:
3	OBL species X1-
4	PACVI Species X2
5.	FAC species x3 =
Stradus	FACU species x 4 = Total Cover UPL species x 5 =
Herb Stratum (Plot size: 5 radius) 1. Aaros 115 Stolonifla	40 Y FAC Column Totals: (A) (B)
2. Trifolium repens	2 · V 1=44
3. Agrostis gigantea	5 N FAC Hydrophytic Vegetation Indicators:
4. Holcus Vanatus	5 N FAC 1 - Rapid Test for Hydrophytic Vegetation
5. Taracetum Vulgare	S N N/ X 2 - Dominance Test is >50%
6. Epilobium ciliatum	∠5 N FACW- 3 - Prevalence Index is ≤3.01
7. Juneus balticus	4 - Morphological Adaptations (Provide supporting
	data in Remarks or on a separate sheet)
9	
10.	¹Indicators of hydric soil and wetland hydrology must
11	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)	
1	
2	Vegetation Present? Yes X No
% Bare Ground in Herb Stratum 10-15 /	= Total Cover
Remarks: moss = 50%.	<u> </u>
111000 - 201.	
l l	

Profile Desc	cription: (Describe	to the depth				or confirm	n the abs	ence of i	ndicators.)
Depth	Matrix		Redo	x Feature	S1	1 2	T4.		Damada
(inches)	Color (moist)	%	Color (moist)		lype	Loc ²	Textu		Remarks
0-21	2.5 y 3/2	,	5 YR 4/4	<u> 5 </u>	<u> </u>	_M_	<u>san</u>	<u>a </u>	
21-23	Glass 1 25/2	,						<u> </u>	
0.1.47	Gley 1 2.5/N	<u> </u>					J 1000		
	***************************************			-					
				_					·
								-	
	oncentration, D=Dep					d Sand G	rains.		n: PL=Pore Lining, M=Matrix.
•	Indicators: (Application				ied.)				or Problematic Hydric Soils ³ :
Histoso	• •	_	✓ Sandy Redox (_ 2 cm Mi	
_	pipedon (A2) listic (A3)		Stripped Matrix Loamy Mucky		1) (evcent	MIDA 4)			ent Material (TF2) allow Dark Surface (TF12)
	en Sulfide (A4)	_	Loamy Gleyed			. NILIXA 3)	,		Explain in Remarks)
	ed Below Dark Surfac	 e (A11)	Depleted Matri		-)			_ 00,01 (2	·
	ark Surface (A12)		Redox Dark Si)		³ln	dicators o	f hydrophytic vegetation and
	Mucky Mineral (S1)	_	Depleted Dark	Surface (I	F7)			wetland h	ydrology must be present,
	Gleyed Matrix (S4)	_	Redox Depres	sions (F8)				unless di	sturbed or problematic.
	Layer (if present):								
					•		***************************************		3.05
Depth (ir	nches):						Hydri	c Soil Pre	sent? Yes X No
Remarks:									
HYDROLO)GY					****	<u>-</u>		
Wetland Hy	drology Indicators:								
1	icators (minimum of o	ne required;	check all that app	ıly)				Secondar	y Indicators (2 or more required)
	Water (A1)		Water-Sta		/es (B9) (e	xcept		Wate	r-Stained Leaves (B9) (MLRA 1, 2,
i	ater Table (A2)		=	1, 2, 4A,		-		4/	A, and 4B)
X Saturat			Salt Crus	t (B11)				Drain	age Patterns (B10)
l	Marks (B1)		Aquatic Ir	nvertebrate	es (B13)			Dry-S	Season Water Table (C2)
Sedime	ent Deposits (B2)		Hydroger	Sulfide O	dor (C1)			Satur	ation Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Oxidized	Rhizosphe	eres along	Living Ro	ots (C3)	Geon	norphic Position (D2)
Algal M	at or Crust (B4)		Presence	of Reduc	ed Iron (C4	1)		_	ow Aquitard (D3)
1	posits (B5)				ion in Tille				Neutral Test (D5)
	Soil Cracks (B6)				i Plants (D	1) (LRR A	A)		ed Ant Mounds (D6) (LRR A)
1	tion Visible on Aerial I			plain in Re	emarks)			Frost	-Heave Hummocks (D7)
	ly Vegetated Concave	Surface (B	8)						
Field Obse		·	o X Depth (ir						
					1911	-			
Water Table			o Depth (in		// "	-	lawal Chia	volomu Dr	mant2 Van V Na
Saturation F (includes ca	pillary fringe)		o Depth (in						resent? Yes X No No
Describe Re	ecorded Data (stream	gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	, if availat	ole:	
<u> </u>									
Remarks:					٠				

Project/Site: Silver Reef Casino Mitigation Site	(City/Cour	nty: Whatcon	n County Sampling Date: 6/1/2011
Applicant/Owner: Silver Reef Casino / Lummi Nation				
Investigator(s): Suzanne Anderson, Stephanie Smith, Fran				
Landform (hillslope, terrace, etc.):				
Subregion (LRR): A				
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 perce				
Are climatic / hydrologic conditions on the site typical for thi				
Are Vegetation No , Soil No , or Hydrology No	-			"Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No	·			eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS Attach site map				
Hydrophytic Vegetation Present? Yes X N	lo			
Hydric Soil Present? Yes N	lo <u>X</u>	I	the Sampled	Area
Wetland Hydrology Present? Yes N	lo <u>X</u>	W	ithin a Wetlan	nd? Yes No
Remarks:				
VEORETICAL AND				
VEGETATION – Use scientific names of plan				
Tree Stratum (Plot size:)			nt Indicator 3? Status	Dominance Test worksheet:
1				Number of Dominant Species That Are OBL, FACW, or FAC:
2				T (1 N) (D) (
3				Total Number of Dominant 2 (B)
4				Percent of Dominant Species
		= Total	Cover	That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total	Cover	FACU species x 4 =
Herb Stratum (Plot size: 5 radius)				UPL species x 5 =
1. Agrostis Stolonifera		<u> </u>	_FAC	Column Totals: (A) (B)
2. Trifolium pratense	20		FACU	Prevalence Index = B/A =
3. Trifolum repens		_N	FAC	Hydrophytic Vegetation Indicators:
4. Tanacetum Vulgare	<u>5</u> <5	_ <u>N</u>	_ N/_	1 - Rapid Test for Hydrophytic Vegetation
5. Vicia sp. 6. Holcus lanatus		_/ <u>/</u>	FAC	2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0¹
8.				4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants ¹
10				Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must
	65	= Total C	Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)				
1				Hydrophytic Vegetation
2				Present? Yes X No
% Bare Ground in Herb Stratum 25 //		– Totai C	,∪vei	
Remarks: <i>moss = < 5/.</i>				

SOIL		Trae 1	nostly out @ site (a)	Sampling Point: SP - 0
Profile Desc	ription: (Describe t	o the depth	needed to document the indicator or co	nfifm the absence of indicators.)
Depth	Matrix	•	Redox Features	
(inches)	Color (moist)	%	Color (moist) % Type¹ Lo	c ² <u>Texture</u> Remarks
0-18	104R 2/1	40		Coase sand
		!		
.63 20	71 - 1			
18-20	gley1 3/N			Sandyclay
	0 1 '			0
				· · · · · · · · · · · · · · · · · · ·
1			- durant Matable OC-Coursed on Control Co.	and Coming 21 postion: D1 post Lining MacMatrix
			educed Matrix, CS=Covered or Coated Sa	nd Grains.
=		ible to all Li		·
Histosol		-	_ Sandy Redox (S5)	2 cm Muck (A10) Red Parent Material (TF2)
	oipedon (A2)	_	Stripped Matrix (S6)Loamy Mucky Mineral (F1) (except MLF	
	istic (A3) en Sulfide (A4)	•	Loamy Micky Milleral (F1) (except MLF _ Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
	en Suinde (A4) d Below Dark Surface	- \/A11\	Depleted Matrix (F3)	Other (Explain in Nemarks)
	ark Surface (A12)	- (A11) _	_ Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
•	Aucky Mineral (S1)	_	Depleted Dark Surface (F7)	wetland hydrology must be present,
	Sleyed Matrix (S4)		Redox Depressions (F8)	unless disturbed or problematic.
	Layer (if present):			
Type:	, (// [///			
•• —	-h\.		_	Hydric Soil Present? Yes No X
Remarks:	ches):			riyunc sour resent: TesNo
HYDROLO				
-	drology Indicators:			
Primary India	cators (minimum of o	ne required;		Secondary Indicators (2 or more required)
Surface	Water (A1)		Water-Stained Leaves (B9) (excep	
High Wa	ater Table (A2)		MLRA 1, 2, 4A, and 4B)	4A, and 4B)
Saturati	on (A3)		Salt Crust (B11)	Drainage Patterns (B10)
Water M	∕larks (B1)		Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sedime	nt Deposits (B2)		Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Oxidized Rhizospheres along Living	g Roots (C3) Geomorphic Position (D2)
Algal Ma	at or Crust (B4)		Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Dep	posits (B5)		Recent Iron Reduction in Tilled Soi	ls (C6) FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted or Stressed Plants (D1) (L	RR A) Raised Ant Mounds (D6) (LRR A)
Inundati	ion Visible on Aerial I	magery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
	y Vegetated Concave			•
Field Obser	, ,	· · · · · · · · · · · · · · · · · · ·		
Surface Wat		es No	Depth (inches):	
Water Table			Depth (inches):	
	Proceeds V	00 ✓ N		Wetland Hydrology Present? Yes No X
Saturation P	resent? Your Your Pillary fringe)	INC	Deptii (mches). ///	rectional hydrology i leaeth: 163 NO **-
Describe Re	corded Data (stream	gauge, mon	itoring well, aerial photos, previous inspecti	ons), if available:
	,	-	,	
Remarks:				:

Note Committee
andform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%): ubregion (LRR): A Lat: N 4 8 · 7 8 9 7 Long: W - /2 2 · 6 6 08 Datum: oil Map Unit Name: Eliza silt loam, drained, 0 to 1 percent slopes NWI classification: Not listed re climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) re Vegetation No Soil No or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No (if needed, explain any answers in Remarks.) IUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Sapecies? Status No Sapecies? Status Sapecies? Status Sapecies Areas All Strata: Species
Lat: N48.7897 Long: W-12.2.6608 Datum: Dominance Eliza silt loam, drained, 0 to 1 percent slopes NWI classification: Not listed
Lat: N48.7897 Long: W-12.2.6608 Datum: Dominance Eliza silt loam, drained, 0 to 1 percent slopes NWI classification: Not listed
Note Committee
re climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) re Vegetation No Soil No or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Wetland? Yes X No X No Wetland? Yes X No Wetland? Yes X No Wetland? Yes X No X No X Yes X No X Yes X No X No X Yes X Yes X Yes X No X Yes X Yes X Ye
re Vegetation No , Soil No , or Hydrology No , significantly disturbed? Are "Normal Circumstances" present? Yes X No re Vegetation No , Soil No , or Hydrology No , naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No
Summark Soi No No No No No No No
SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No
Hydrophytic Vegetation Present? Hydric Soil Present? Yes X No Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Present? No Wetland? Wetland? Yes X No Within a Wetland? Yes X No Wetland Present? No Wetland Hydrology Present Present Hydrology Presen
Is the Sampled Area within a Wetland? Yes X No No Wetland Hydrology Present? Yes X No Wetland Hydrology Present? Yes X No Wetland? Yes X
Wetland Hydrology Present? Yes _K
// Absolute
Absolute Dominant Indicator Species? Status
Absolute Dominant Indicator Species? Status
Absolute Dominant Indicator Species? Status
Number of Dominant Species 2 1 1 2 3 3 3 3 4 4 4 5 4 5 5 5 5 5
1.
2.
Species Across All Strata: Species Across All Strata:
4
Sapling/Shrub Stratum (Plot size:)
Prevalence Index worksheet: Total % Cover of: Multiply by:
2.
3.
4.
5
Herb Stratum (Plot size: 5 radius) 1. Bromus hordeaceus ssp. 40 Y UPL 2. Agrostis Capillaris 3. Juncus balticus The species x4= UPL species x5= Column Totals: (A) (B) Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size: 5 radius) 1. Bromus hordeaceus ssp. 40 Y UPL 2. Agrostis Capillaris 25 Y FAC 3. Juncus balticus 25 Y FACWt Hydrophytic Vegetation Indicators:
2. Agrostis Capillaris 25 Y FAC Prevalence Index = B/A = 3. Juncus balticus 25 Y FACWt Hydrophytic Vegetation Indicators:
3. Juncus balticus 25 y FACNT Hydrophytic Vegetation Indicators:
1/12
A VIIII (SD.
5
6 3 - Prevalence Index is ≤3.0 ¹
7 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
8 data in Remarks or on a separate sheet) 9 5 - Wetland Non-Vascular Plants ¹
10 Problematic Hydrophytic Vegetation ¹ (Explain)
11. Indicators of hydric soil and wetland hydrology must
be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)
1 Hydrophytic
2 Vegetation Present? Yes No
% Bare Ground in Herb Stratum = Total Cover
Remarks: /5 //. moss

OIL			Fide	e fulli	1 out	3:30	Opm	Sampling Point: <u>SP - /</u>
Profile Des	cription: (Descri	e to the dept	h needed to docu					f indicators.)
Depth	Matrix			x Feature			·	
(inches)	Color (moist)		Color (moist)	_ <u> </u>	Type ¹			Remarks
0-5	10 YR 3/2		7.54R 4/6		. <u> </u>	<u>М/Рі</u>	- Joany Ch	ay
5 - 20	Gley 1 3	[N	7.5 yr 4/6	10	C	M/PL	sandy (elay
			and the state of t					, , , , , , , , , , , , , , , , , , ,
·····								
			Reduced Matrix, C			ed Sand G	Grains. ² Loca	tion: PL=Pore Lining, M=Matrix.
łydric Soil	Indicators: (App		_RRs, unless othe		ted.)			s for Problematic Hydric Soils ³ :
Histoso	` '	-	X Sandy Redox (■ Control The control					Muck (A10)
	pipedon (A2)	-	Stripped Matrix Loamy Mucky I		1) (04001	4 R#I DA 4		Parent Material (TF2) Shallow Dark Surface (TF12)
Hydroge	listic (A3) en Sulfide (A4)	•	Loamy Gleyed	Matrix (F2		K MILITAL I		(Explain in Remarks)
	ed Below Dark Sur	, , ,	Depleted Matri				35	
	Park Surface (A12)		Redox Dark Su					s of hydrophytic vegetation and dhydrology must be present,
	Mucky Mineral (S1 Gleyed Matrix (S4)		Depleted Dark Redox Depress					disturbed or problematic.
	Layer (if present		Tredox Depress	310113 (1 0)			1	distance of prodictinatio.
Type:	Layer (ii present	•						
Depth (in	apper).						Hydric Soil F	Present? Yes <u>X</u> No
			mpacted				1 -	
IYDROLC								
-	/drology Indicato		; check all that app	lv)			Secon	dary Indicators (2 or more required)
	Water (A1)	n one required	Water-Sta	•	(BQ) (evcent		ater-Stained Leaves (B9) (MLRA 1, 2
	ater Table (A2)			1, 2, 4A,		except		4A, and 4B)
/ Ingli / V Saturat			Salt Crust		and 4D)			ainage Patterns (B10)
•	Varks (B1)		Aquatic Ir		es (B13)			y-Season Water Table (C2)
	ent Deposits (B2)			Sulfide O				turation Visible on Aerial Imagery (CS
·	eposits (B3)		X Oxidized			Livina Ro		comorphic Position (D2)
	lat or Crust (B4)		· ·	of Reduce				allow Aquitard (D3)
_	posits (B5)					ed Soils (C		C-Neutral Test (D5)
	Soil Cracks (B6)					01) (LRR /	•	ised Ant Mounds (D6) (LRR A)
	tion Visible on Aeri	al Imagery (B7				, `	•	ost-Heave Hummocks (D7)
	ly Vegetated Cond			•	ŕ			
Field Obse								
Surface Wa	iter Present?	Yes 1	NoX_ Depth (in	nches):				
Water Table	e Present?		No Depth (ir		20"			
Saturation F		Yes <u>K</u>	No Depth (ir	nches):/	0"	We	tland Hydrology	Present? Yes No
Describe Re	ecorded Data (stre	am gauge, mo	nitoring well, aerial	photos, pi	revious in	spections)), if available:	
Remarks:						***		
. wiiano.								

Applicant/Owner: Silver Reaf Casho / Lummi Nation State: WA Sampling Point: Sp. FO	Project/Site: Silver Reef Casino Mitigation Site	(City/County: _	Whatcom	County	Sampling Date: _	6/1/2011
Investigator(s): Suzanne Anderson. Stephante Smith, Frank Lawrence, Monika Lange. Section, Township, Range: Section 14 / T 38 N / R 1E Landform (hillslope, terrace, etc): Local rolled (concrave, convex, none): Slope (%): Subregion (RRF): A Lat. / 4 / 8 / 7 Long: W - 7 / 2 . 6 6 / 8 Datum Soli Map Unit Namer: Eliza siti losm drained. 0 to 1 percent slopes	·						
Landform (hillslope, terrace, etc.): Local relief (conceive, convex, none): Subregion (LRR): A Lat:							
Solf Mep Unit Name: Eliza sit toem drained, 0 to 1 percent slopes Novi classification. Not isseed Novi classification. Not isseed Novi classification. Not isseed Not classification. Not classification. Not isseed Not classification. Not classification. Not isseed Not classification. Not classification. Not continued the continued of the co							
Soil Map Unit Name: Etza silt losm, drained, 0 to 1 percent slopes New John Conditions on the site typical for this time of year? Yes_X No (If no, explain in Remarks.) No relydrology_ No naturally problematic? (If no, explain in Remarks.) No relydrology_ No naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present?							
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.) Are Vagetation No, Soil No, or Hydrology No adjuntantly disturbed? Are "Normal Circumstances" present? Yes X No (if needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No (if needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No (if needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No (if needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No (if needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No (if needed, explain any answers in Remarks.) It is a sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No (if needed, explain any answers in Remarks.) It is a sampling point locations, transects, important features, etc. Hydrophytic Vegetation Remarks No (if needed, explain any answers in Remarks No (if needed, explain No (if needed, explain any answers in Remarks No (if needed, explain any							
Are Vegetation No. Soil No. or Hydrology No. asignificantly disturbed? Are Vegetation No. Soil No. or Hydrology No. naturally problematic? Weter Vegetation No. Soil No. or Hydrology No. naturally problematic? Wethydrophytic Vegetation Present? Hydrophytic Vegetation Present? Hydrophytic Vegetation Present? Hydrophytic Vegetation Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Wetand Hydrology Present? Yes. X. No. Absolute A	•						
Are Vegetation No Soil No or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No is the Sampled Area within a Wetland? Yes X No Wetland Hydrology Present? Yes X No is the Sampled Area within a Wetland? Yes X No No Metland Hydrology Present? Yes X No is the Sampled Area within a Wetland? Yes X No No Metland Hydrology Present? Yes X No No Network No No No Notice Notice No No No Notice No No No Notice No	•	-					
SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No within a Wetland? Yes X No Wetland Hydrology Present? Tree Stratum (Plot size:							No
Hydrophytic Vegetation Present?	Are Vegetation No , Soil No , or Hydrology No	_ naturally pr	oblematic?	(If n	eeded, explain any an	swers in Remarks.)	
Section Present Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Within a Wetland? Yes X No Yes X No Yes X No Within a Wetland? Yes X No Wi	SUMMARY OF FINDINGS - Attach site maj	p showing	sampling	point lo	ocations, transec	cts, important fe	atures, etc.
Wetland Hydrology Present? Yes X No within a Wetland? Yes X No	Hydrophytic Vegetation Present? Yes X	No			_		
VEGETATION - Use scientific names of plants. Tree Stratum (Plot size:	· ·	No	1			Ϋ́ No	
Absolute Dominant Indicator Species Status Dominant Indicator Species Species Status Species Species Status Species Spe		No	WICIBIS	a vvettali	u: 165_	<u> </u>	-
Absolute	Remarks:						
Absolute							
Absolute	VECETATION Lies eciontific names of pla	nte		•••••			
Number of Dominant Species Status That Are OBL, FACW, or FAC: 5	VEGETATION - Ose scientific findines of pie		Dominant II	ndicator	Dominance Test we	orksheet:	
1. 2	Tree Stratum (Plot size:)					t Species	
Sapling/Shrub Stratum (Plot size: 5 ' radius)	1						(A)
Sapling/Shrub Stratum (Plot size: 5' radius	2				Total Number of Dor	minant 5	
Sapling/Shrub Stratum (Plot size: 5 / Nativs Salix Strekensis Salix Strekensis Salix Strekensis Salix Nucuda Salix Strekensis Salix Strekensis Salix Nucuda Salix Strekensis	3				Species Across All S	Strata:	(B)
Saping/Shrub Stratum (Plot size: 5 Tradius 1.	4						
Salix Sitchensis 25	Sapling/Shrub Stratum (Plot size: 5 ' YUAU) S		_ = Total Cove	∍r			(A/B)
2. Salvy lucida 3. Spirala douglasiv 4. Populus balsamifera 5. Alnus rubra (edge of plot) 7. N FAC Herb Stratum (Plot size: 5 radius) 1. Juvus balficus 2. Patentilla ausurna 3. Equischura avvense 4. Veronica americana 5. Carex Lynghyei 5. N OBL 6.		25	<u>y</u> [ACW			
S. Spirated addylastic S				ACW+			
5. Alovs rubra (edge of plot) TR N FAC Herb Stratum (Plot size: 5' ractivs) 1. JUNOUS baltrous 2. Patentilla ansurina 30 Y FACW+ 4. Verronica americana 10 N BBL 55 Total Cover Hydrophytic Vegetation 10 N OBL 10 N OBL 11 - Rapid Test for Hydrophytic Vegetation 12 - Dominance Test is >50% 3 - Prevalence Index is <3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wedard Non-Vascular Plants¹ 10 - Total Cover Woody Vine Stratum (Plot size:) 1		15					
Same Stratum (Plot size: 5 radius) Salficus Size Sizedius Sizedius Size Sizedius Sizedius Size Sizedius Sizedius Sizedius Size Sizedius							
Herb Stratum (Plot size: 5' radius) 36	5. Alnus rubra (edge of plot)	<i>_'TK_</i> _					
1. JUNCUS BALTICUS 2. PAENTILA AUSULINA 3. Equischum auvense 4. Veronica americana 5. Carex Lynghyei 5. Carex Lynghyei 6.	Herh Stratum (Plot size: 5 (a)(ii))	_ 55	_ = Total Cove	er			
2. Potentilla ausuma 30	1. Juneus haltreus	30	V	FACW+			
3. Equisitura avvense 4. Veronica awericana 5. Carex Lynghyei 5. N OBL 6. 3. Prevalence Index is \$\infty\$. 7. 4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) 9. 5. Wetland Non-Vascular Plants (Provide Sheet) 10. 11.	1					lev = R/A =	
4. Veromea americance 5. Carex Lynghyei 6		10	N.	FAC			······································
6	4. Veronica americana		<u>N</u>	OBL	1 - Rapid Test f	or Hydrophytic Veget	ation
6	5. Carex Lyngbyei	5	<u>N</u>	OBL	2 - Dominance	Test is >50%	
8					3 - Prevalence I	Index is ≤3.0 ¹	
9 5 - Wetland Non-Vascular Plants¹ 10 Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Woody Vine Stratum (Plot size:) 1 = Total Cover Wegetation Present? Yes No					4 - Morphologic	al Adaptations ¹ (Prov	ide supporting
10 Problematic Hydrophytic Vegetation¹ (Explain) 11 \$\frac{85}{5}\$ = Total Cover \[\frac{\text{Woody Vine Stratum}}{2}\$ \text{Plot size:} \\ \frac{1}{1}\$ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.} \[\frac{\text{Hydrophytic}}{\text{Vegetation}}\$ \text{Vegetation} \\ \frac{\text{Yes} \text{No} \\ \text{Present?} \text{No} \\ \text						•	sneet)
11	i e						(Evoluin)
Woody Vine Stratum (Plot size:) 1 = Total Cover We Bare Ground in Herb Stratum 30 /.							
Woody Vine Stratum (Plot size:) 1	I 8.		= Total Cove				
2 = Total Cover Vegetation Present? Yes X No	Woody Vine Stratum (Plot size:)	. 0 3	Total Cove	•			
% Bare Ground in Herb Stratum 30 /.	1						
% Bare Ground in Herb Stratum 30 /.	2				Vegetation	Yes X No	
Remarks:	% Para Cround in Hash Stratum 30'/		_= Total Cove	:r	, , cooint		
1/1027 - 3 /	Remarks:				<u> </u>		
	7/1057 > 3 /					•	
Some pond soum	Some pond soum						

	,	TOTIC CITE IS	uioutoi	01 001111111	the absence of indicators.)
Depth Matrix		x Features			
(inches) Color (moist) %	Color (moist)		Type ¹	Loc ²	Texture Remarks
0-5 Gley 1 2.5/N	25 y 4/4	5_		M/PL	claysand
, ,	,			,	J
5-20 Hey 1 2.5/N	-				sand
3 20 0100 \$ 2.79.					
	-				
¹ Type: C=Concentration, D=Depletion, RM	=Reduced Matrix CS	=Covered	or Coate	d Sand Gr	ains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all				u Oanu On	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)			,		2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix				Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky N		(excep	MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	Loamy Gleyed I				Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Matrix	(F3)			
Thick Dark Surface (A12)	Redox Dark Sur				³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark S	-	7)		wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depress	ions (F8)			unless disturbed or problematic.
Restrictive Layer (if present):					
Type:					
Depth (inches):					Hydric Soil Present? Yes X No
Remarks:					
			,		
· · · · · · · · · · · · · · · · · · ·					
HADDU! UCA					
Wetland Hydrology Indicators:					
Wetland Hydrology Indicators: Primary Indicators (minimum of one require					Secondary Indicators (2 or more required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1)	Water-Stai	ned Leave		xcept	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2)	Water-Stai	ned Leave 1, 2, 4A, a	nd 4B)	xcept	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stai MLRA · Salt Crust	ned Leave 1, 2, 4A, a (B11)	nd 4B)	xcept	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stai MLRA ' Salt Crust Aquatic Inv	ned Leave 1 , 2, 4A, a r (B11) /ertebrates	nd 4B)	xcept	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen	ned Leave 1, 2, 4A, a l (B11) /ertebrates Sulfide Od	nd 4B) (B13) or (C1)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R	ined Leave 1, 2, 4A, ai (B11) vertebrates Sulfide Od Rhizosphen	nd 4B) (B13) or (C1) es along	Living Roo	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Geomorphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen X Oxidized R Presence of	ned Leave 1, 2, 4A, al (B11) /ertebrates Sulfide Od Rhizospher of Reduced	nd 4B) (B13) or (C1) es along	Living Roo	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ts (C3) Shallow Aquitard (D3)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen X Oxidized R Presence o	ned Leave 1, 2, 4A, an (B11) vertebrates Sulfide Od Rhizospher of Reduced n Reduction	nd 4B) (B13) or (C1) es along I Iron (Con	Living Roo 4) d Soils (C6	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ats (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Coxidized R Presence of Recent Iro	ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od thizospher of Reduced n Reduction Stressed I	nd 4B) (B13) or (C1) es along I Iron (Continue) n in Tille	Living Roo 4) d Soils (C6	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) des (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Coxidized R Presence of Recent Iro Stunted or Other (Exp	ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od thizospher of Reduced n Reduction Stressed I	nd 4B) (B13) or (C1) es along I Iron (Continue) n in Tille	Living Roo 4) d Soils (C6	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) ats (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Coxidized R Presence of Recent Iro Stunted or Other (Exp	ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od thizospher of Reduced n Reduction Stressed I	nd 4B) (B13) or (C1) es along I Iron (Continue) n in Tille	Living Roo 4) d Soils (C6	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) des (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Base) Sparsely Vegetated Concave Surface (Bel)	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen K Oxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od Rhizosphen of Reduced n Reduction Stressed I slain in Rer	nd 4B) (B13) or (C1) es along I Iron (Continue) n in Tille	Living Roo 4) d Soils (C6	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) des (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Bacterial Concave Surface (Bacterial C	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen K Oxidized R Presence of Recent Iro Stunted or Other (Exp (B8)	ned Leave 1, 2, 4A, and (B11) vertebrates Sulfide Od Rhizospher of Reduced n Reduction Stressed I clain in Rer ches):	nd 4B) (B13) or (C1) es along I Iron (Continue) n in Tille	Living Roo 4) d Soils (C6	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) des (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (Bill of Concave Surface (B	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp (B8) No L Depth (inc	ned Leave 1, 2, 4A, ar (B11) vertebrates Sulfide Od thizospher of Reduced n Reductio Stressed I olain in Rer	nd 4B) (B13) or (C1) es along il Iron (C- n in Tille Plants (C narks)	Living Roo 4) d Soils (C6 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (Bill of Concave Surface (B	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen K Oxidized R Presence of Recent Iro Stunted or Other (Exp (B8)	ned Leave 1, 2, 4A, ar (B11) vertebrates Sulfide Od thizospher of Reduced n Reductio Stressed I olain in Rer	nd 4B) (B13) or (C1) es along il Iron (C- n in Tille Plants (C narks)	Living Roo 4) d Soils (C6 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) des (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Bacterial Concave Surface (Bacterial C	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp (B8) No L Depth (inc No Depth (inc	ned Leave 1, 2, 4A, an (B11) vertebrates Sulfide Od Rhizospher of Reduced n Reductio Stressed I plain in Rer ches):	nd 4B) (B13) or (C1) es along I Iron (C- n in Tille Plants (C- nnarks)	Living Roo 4) d Soils (C6 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (Bill of Concave Surface (B	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp (B8) No L Depth (inc No Depth (inc	ned Leave 1, 2, 4A, an (B11) vertebrates Sulfide Od Rhizospher of Reduced n Reductio Stressed I plain in Rer ches):	nd 4B) (B13) or (C1) es along I Iron (C- n in Tille Plants (C- nnarks)	Living Roo 4) d Soils (C6 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Bacterial Concave Surface (Bacterial C	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp (B8) No L Depth (inc No Depth (inc	ned Leave 1, 2, 4A, an (B11) vertebrates Sulfide Od Rhizospher of Reduced n Reductio Stressed I plain in Rer ches):	nd 4B) (B13) or (C1) es along I Iron (C- n in Tille Plants (C- nnarks)	Living Roo 4) d Soils (C6 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (Beld Observations: Surface Water Present? Water Table Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, medicated)	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp (B8) No L Depth (inc No Depth (inc	ned Leave 1, 2, 4A, an (B11) vertebrates Sulfide Od Rhizospher of Reduced n Reductio Stressed I plain in Rer ches):	nd 4B) (B13) or (C1) es along I Iron (C- n in Tille Plants (C- nnarks)	Living Roo 4) d Soils (C6 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B Sparsely Vegetated Concave Surface (Beld Observations: Surface Water Present? Water Table Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, medicated)	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or Other (Exp (B8) No L Depth (inc No Depth (inc	ned Leave 1, 2, 4A, an (B11) vertebrates Sulfide Od Rhizospher of Reduced n Reductio Stressed I plain in Rer ches):	nd 4B) (B13) or (C1) es along I Iron (C- n in Tille Plants (C- nnarks)	Living Roo 4) d Soils (C6 1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Project/Site: Silver Reef Casino Mitigation Site	C	ity/County:	Whatcon	n County	Sampling Date: 6/1/2011
Applicant/Owner: Silver Reef Casino / Lummi Nation				State: <u>WA</u>	Sampling Point: SP - 101
Investigator(s): Suzanne Anderson, Stephanie Smith, Frank L.	awrence,	Monika La	nge_Sectio	n, Township, Range: <u>S</u>	ection 14 / T 38 N / R 1E
Landform (hillslope, terrace, etc.):	L	ocal relief	(concave, c	convex, none):	Siope (%):
Subregion (LRR): A	Lat: _ //	48.7	897	Long: W-122.6	608 Datum:
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 percent s					
Are climatic / hydrologic conditions on the site typical for this tir					
Are Vegetation No , Soil No , or Hydrology No sig	nificantly	disturbed?	Are	"Normal Circumstances"	present? Yes X No
Are Vegetation No , Soil No , or Hydrology No nat	turally pro	biematic?	(If n	eeded, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sh	owing :	samplin	g point lo	ocations, transects,	, important features, etc.
Hydrophytic Vegetation Present? Yes No _				_	
1		1	e Sampled in a Wetlan	Area	No
		With	III a Wedan	u: 100	
Remarks:					
VEGETATION – Use scientific names of plants.					
		Dominant	Indicator	Dominance Test works	sheet:
·		Species?		Number of Dominant Sp	
1				That Are OBL, FACW, o	or FAC: (A)
2				Total Number of Domina	- /
3				Species Across All Strat	ta: (B)
4		= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW, o	
Sapling/Shrub Stratum (Plot size: 5 radius)	<i>c</i> -	N.	a	Prevalence Index work	
1. Alnus rubra					Multiply by:
2.				OBL species	x 1 =
3				FACW species	x 2 =
4. 5.				FAC species	x 3 =
	5	= Total Co	ver		x 4 =
Herb Stratum (Plot size: 5 radus)					x 5 =
	<i>30</i>	7	FACW+	Column Totals:	(A) (B)
	25 .		FACUT		= B/A =
	<u>25) </u>	$\frac{N}{N}$	UPL	Hydrophytic Vegetatio	
7.07	<u>10</u>		FACW	1 - Rapid Test for H	· · · · · ·
5. Tuncos effusus 6. Lactuca serriola	<u> </u>	-/V	NL	2 - Dominance Test	
7. Phalaris arundinacea	TR .	N	FACW	3 - Prevalence Inde	ex is ≤3.0′ daptations¹ (Provide supporting
8				data in Remarks	or on a separate sheet)
9.				5 - Wetland Non-Va	ascular Plants ¹
10				Problematic Hydrop	ohytic Vegetation¹ (Explain)
11					and wetland hydrology must
	75 =	= Total Cov	/er	be present, unless distu	rbed or problematic.
Woody Vine Stratum (Plot size:)					
1				Hydrophytic Vegetation	V
2		= Total Cov	/er	Present? Yes	s No
% Bare Ground in Herb Stratum		, 5.0. 50			
Remarks:					
					•

	Sampling Point:	SP -	101
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Profile Desc	cription: (Describe t	to the depth	needed to docum	ent the i	ndicator	or confirm	n the absence of indicators.)
Depth	Matrix		Redox	c Features	;	~~~	
(inches)	Color (moist)		Color (moist)		Type ¹		Texture Remarks
0-8	104R 3/1		1.5 yR 4/6	_5	<u> </u>	MIPL	Sandy Clay Loam
8-15	104R 3/1		The second secon				Sand
15-20	61ey 1 2.5/N		PRODUCTION OF THE PROPERTY OF				very fine sand w/ slight clay component
Hydric Soil Histosol Histic E _I Black Hi Hydroge Deplete Thick Da	pipedon (A2) istic (A3) en Sulfide (A4) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1)	able to all LF — — — — • (A11) —	RRs, unless other Sandy Redox (S Stripped Matrix Loamy Mucky M Loamy Gleyed M Depleted Matrix Redox Dark Sur Depleted Dark S	wise note (S5) (S6) Iineral (F1 Matrix (F2) (F3) face (F6) Gurface (F	ed.)) (excep		Indicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present,
	Bleyed Matrix (S4) Layer (if present):		_ Redox Depressi	ons (F8)			unless disturbed or problematic.
Type: Depth (in-	ches):						Hydric Soil Present? Yes No
HYDROLO	uppu & n	uaale ———	<u>tayors</u>	noci	<u> </u>	elly ——	pelas
							
Primary Indi	drology Indicators: cators (minimum of o	ne required; o			(DO) (Secondary Indicators (2 or more required)
High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Der Surface	flarks (B1) Int Deposits (B2) Int Deposits (B3) Int or Crust (B4) Int or Crust (B4) Int or Crust (B6) Int or Crust (B6) Int or Visible on Aerial Inty Int or Vegetated Concave		Salt Crust Aquatic Inv Hydrogen 3 Oxidized R Presence c Recent Iron Stunted or Other (Exp	I, 2, 4A, a (B11) vertebrate: Sulfide Oc thizospher of Reduction Stressed	nd 4B) s (B13) dor (C1) res along d Iron (C on in Tille Plants (I	Living Roo 4) d Soils (C6	
Surface Wat Water Table Saturation P (includes ca	er Present? Yer Present? Yer	es No	Depth (inc	ches): ches):		Wetia	land Hydrology Present? Yes No
	morst at						

Project/Site: Silver Reef Casino Mitigation Site					
Applicant/Owner: Silver Reef Casino / Lummi Nation		·····		State: WA	Sampling Point: SP - 102
Investigator(s): Suzanne Anderson, Stephanie Smith, Frank					
Landform (hillslope, terrace, etc.):		Local relief	(concave, c	convex, none):	Slope (%):
Subregion (LRR): A	_ Lat: <u>//</u> _	48.78	97	Long: $W-/22$.	_ <i>6608</i> _ Datum:
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 percer	nt slopes	., ,,		NWI classific	cation: Not listed
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation No , Soil No , or Hydrology No	significantly	disturbed?	Are	"Normal Circumstances"	present? Yes X No
Are Vegetation No , Soil No , or Hydrology No	naturally pro	blematic?	(If n	eeded, explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes X N	o				
Hydric Soil Present? Yes X N		1	e Sampled in a Wetlan	Area od? Yes X	No
Wetland Hydrology Present? Yes X N	0	WILL		103	
Remarks:					
VEGETATION – Use scientific names of plan	ts.	•			
	Absolute	Dominant	Indicator	Dominance Test work	sheet:
Tree Stratum (Plot size:)	% Cover			Number of Dominant S	pecies a
1				That Are OBL, FACW,	or FAC: 3 (A)
2				Total Number of Domin	
3				Species Across All Stra	ata: (B)
4				Percent of Dominant S	
Sapling/Shrub Stratum (Plot size: 5 radius)				That Are OBL, FACW, Prevalence Index wor	
1. Alms rubra	TR	<i>N</i>	FAC	i	Multiply by:
2				Į.	x 1 =
3				i	x 2 =
4.				1	x3=
5	110	= Total Co		FACU species	x 4 =
Herb Stratum (Plot size: 5' radiius)	18-	- Total Co	ver	UPL species	x 5 =
1. Itolous lanatus	30	<u> </u>	FAC	Column Totals:	(A) (B)
2. Phalaris arundinacea	<u> 30 </u>		FACW	Prevalence Index	: = B/A =
3. Agrostis capillaris	25	<u> </u>	<u>FAC</u>	Hydrophytic Vegetation	on Indicators:
4. Festuca abundinacea	15	<u>N</u>	FAC-	1	Hydrophytic Vegetation
5. Bronus hordeaceus sap.	- 5		UPL	X 2 - Dominance Tes	
6. Poa pratensis			FAC	3 - Prevalence Inde	
7. Epilobum ciliatum		_N	EACW-	4 - Morphological A	Adaptations ¹ (Provide supporting sor on a separate sheet)
8. Vicia Sp.				5 - Wetland Non-V	
9					phytic Vegetation ¹ (Explain)
11.					il and wetland hydrology must
	100	= Total Cov	/er	be present, unless dist	urbed or problematic.
Woody Vine Stratum (Plot size:)					
1				Hydrophytic	
2				Vegetation Present? Ye	es No
% Bare Ground in Herb Stratummoss = 50 //		= Total Cov	/er		, — -
Remarks:				1	

Depth Mark Redox Cestures Depth Section Sect	Profile Description: (Describ	e to the depth i	needed to docum	nent the	indicator	or confirm	the absence of	indicators.)
D-12 10 yF 3/1 5 yF 4/4 2 C PL Sund	DepthMatrix							
Type: C=Concentration, D=Depletion, RM=Reduced Metrix, CS=Covered or Goated Sand Grains. Location: PL=Pore Lining, M=Matrix, United Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosoi (A1)	(inches) Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix, Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*; Histios (A1)	0-12 104R 3/1		5 YR 4/4_	_2_	_ <u></u>	_PL	sand_	1116
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains \$^1_{\text{Location: }PL=Pore Lining, M=Matrix, Ptydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*; Histoscippedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Very Shallow Dark Surface (TF2) Other (Explain in Remarks) Very Shallow Dark Surface (TF2) Other (Explain in Remarks) Other (Explain in Remark	12-17 Clay 1 15		Investit			11/01	5. Husan	ad .
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosoi (A1)	12-11 <u>61eg 1 2.3,</u>		0 yr 7/4			101/12		W)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosoi (A1)								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosoi (A1)								
Histosol (A1)						ed Sand Gr		
Histic Epipedon (A2) Stripped Matrix (S8) Red Parent Material (TF2) Black Histic (A3) Loarny Mucky Mineral (F1) (except MLRA 1) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Welfard Mydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Depth (inches): Wetand Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required): Surface Water (A1) Water-Stained Leaves (B9) (except Water Stained Leaves (B9) (MLRA 1, 4, and 4B) Saturation (A3) Saft Crust (B11) Drainage Patterns (B13) Sediment Deposits (B3) Aquatio Invertebrates (B13) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Iron Deposits (B3) Source (B4) Recent Iron Reduction in Tilled Soils (C6) Surface Soll Cracks (B6) Sturted Or Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Vester Table Present? Yes No Depth (inches): Wetter Table Present? Yes No Depth (,				,			•
Black Histic (A3)		<u> </u>	- •	-				, ,
Hydrogen Sulfide (A4)		******	- ,,		1) (excep	t MLRA 1)		• •
Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Muky Mineral (S1) Depleted Dark Surface (F7) Wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Depth (inches): Hydric Soil Present? Yes No_ No_			•			,		
Thick Dark Surface (A12)		ice (A11)			•			
Redox Depressions (F8) unless disturbed or problematic.		` _)		³ Indicators	of hydrophytic vegetation and
Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type:							wetland	hydrology must be present,
Type:	Sandy Gleyed Matrix (S4)		Redox Depress	ions (F8)		•	unless o	disturbed or problematic.
Popth (inches):	Restrictive Layer (if present):							
YDROLOGY Wetland Hydrology Indicators: Secondary Indicators (2 or more required) Secondary Indicators (2 or more required) Surface Water (A1)	Type:							x
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) MIRA 1, 2, 4A, and 4B) Saturation (A3) Salt Crust (B11) Water Marks (B1) Drainage Patterns (B10) Aquatic Invertebrates (B13) Drift Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (FAC-Neutral Test (D5) Surface Soli Cracks (B6) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Mater Stained Leaves (B9) (except Water-Stained Leaves (B9) (MLRA 1, 4A, and 4B) Aquatic rust (B1) Drainage Patterns (B10) Saturation Visible on Aerial Imagery (face (B8)) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Mater Table Present? Yes No Depth (inches): Metland Hydrology Present? Yes No No Depth (inches): Metland Hydrology Present? Yes No No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Depth (inches):						Hydric Soil Pi	resent? Yes No
Surface Water (A1)	Wetland Hydrology Indicator							
High Water Table (A2) Saturation (A3) Salt Crust (B11) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Water Table (A2) MLRA 1, 2, 4A, and 4B) Aquatic Invertebrates (B13) Aquatic Invertebrates (B13) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C2) Presence of Reduced Iron (C4) Shallow Aquitard (D3) FAC-Neutral Test (D5) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inch	Primary Indicators (minimum of	one required; c	heck all that apply	y)			<u>Seconda</u>	ary Indicators (2 or more required)
Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C2) Saturation Visible on Aerial Imagery (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Shallow Aquitard (D3) Fresence Soil Cracks (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Frost-Heave Hummocks (D7) Frost-Heave Hummocks (D7) Surface Water Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No No Depth (inches):	Surface Water (A1)		Water-Stai	ined Leav	res (B9) (e	except	Wat	ter-Stained Leaves (B9) (MLRA 1, 2
Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C1) Saturation Visible on Aerial Imagery (C2) Dry-Season Water Table (C2) Presence of Reduced Iron (C1) Saturation Visible on Aerial Imagery (C2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3)	High Water Table (A2)		MLRA	1, 2, 4A,	and 4B)			•
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C1) Saturation Visible on Aerial Imagery (C2) Shallow Aquitard (D2) Shallow Aquitard (D3)	Saturation (A3)		Salt Crust	(B11)			Dra	inage Patterns (B10)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Water Table Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Fact-Neutral	Water Marks (B1)		Aquatic Inv	vertebrate	es (B13)		Dry-	-Season Water Table (C2)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8)	Sediment Deposits (B2)		Hydrogen	Sulfide O	dor (C1)		Sati	uration Visible on Aerial Imagery (C
Iron Deposits (B5)	Drift Deposits (B3)		<u>人</u> Oxidized F	Rhizosphe	eres along	Living Roo	ots (C3) Geo	omorphic Position (D2)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Algal Mat or Crust (B4)		Presence	of Reduc	ed Iron (C	4)	Sha	llow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No _K_ Depth (inches): Water Table Present? Yes No _K_ Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Iron Deposits (B5)		Recent Iro	n Reduct	ion in Tille	ed Soils (C6	s) FAC	C-Neutral Test (D5)
Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Surface Soil Cracks (B6)		Stunted or	Stressec	i Plants (D	01) (LRR A)) Rais	sed Ant Mounds (D6) (LRR A)
Field Observations: Surface Water Present? Yes No _K Depth (inches): Water Table Present? Yes No _K Depth (inches): Saturation Present? Yes _K No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Inundation Visible on Aeria	I Imagery (B7)	Other (Exp	olain in Re	emarks)		Fros	st-Heave Hummocks (D7)
Surface Water Present? Yes No _K Depth (inches): Water Table Present? Yes No _K Depth (inches): Saturation Present? Yes _K No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Sparsely Vegetated Conca	ive Surface (B8)	· ·					
Water Table Present? Yes No _K Depth (inches): Saturation Present? Yes _K No Depth (inches): Wetland Hydrology Present? Yes _K No Secribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Field Observations:							
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Surface Water Present?	Yes No	Depth (inc	ches):				
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Water Table Present?	Yes No	人 Depth (inc	ches):				
	(includes capillary fringe)	Yes _X_ No	Depth (inc	ches):	16"	Wetl		Present? Yes X No
Remarks:	Describe Recorded Data (strea	m gauge, monit	oring well, aerial p	photos, p	revious in:	spections),	if available:	
	Remarks:							

Project/Site: Silver Reef Casino Mitigation Site		City/County: _	Whatcon	n County	Sampling Date:6/2/2011
Applicant/Owner: Silver Reef Casino / Lummi N	Vation			State: <u>WA</u>	Sampling Point: SP - /ひ
Investigator(s): Suzanne Anderson, Stephanie					
Landform (hillslope, terrace, etc.):		Local relief (concave, o	convex, none):	Slope (%):
Subregion (LRR): A	Lat:	N 48.7	897	Long: W-12Z	66 08 Datum:
Soil Map Unit Name: Eliza silt loam, drained,					
Are climatic / hydrologic conditions on the site t					
Are Vegetation No , Soil No , or Hydrolo					s" present? Yes X No
Are Vegetation No , Soil No , or Hydrol				eeded, explain any ans	
SUMMARY OF FINDINGS - Attach			,	•	·
Hydrophytic Vegetation Present? Yes	XNo				
Hydric Soil Present? Yes	No <u>X</u> No <u>X</u>	Is the	Sampled a Wetlar	Area	No
	No <u> </u>	WILLIAM	i a vvetiai	iur 165	140
Remarks:	•			•	
VECETATION III-a a in white manner	a of plants				
VEGETATION – Use scientific name		D		Danisana Taat wa	· ·
Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?		Dominance Test wo Number of Dominant	Cunatian in the control of the contr
1	•			That Are OBL, FACV	
2		+		Total Number of Dom	ninant 3
3				Species Across All S	trata: (B)
4				Percent of Dominant	
Sapling/Shrub Stratum (Plot size:	,	_ = Total Cov	er	That Are OBL, FACV	(100)
1				Prevalence Index w	
2				Total % Cover of	
3.				1	x 1 =
4					x 2 = x 3 =
5					x 4 =
Herb Stratum (Plot size: 5'radivs)		_ ≔ Total Cov	er	1	x 5 =
1. Agrostis stolonifera	20	γ	FAC	i .	(A) (B)
2. Wolcus lanatus	10	- - 'y -	FAC		
3. Bromus hordeaceus ssp.		y ·	UPL	Hydrophytic Vegeta	ex = B/A =
4. Tanacetum vulgare	(5)	N	NI		r Hydrophytic Vegetation
5. Byilobium ciliatum	TR	_ ~ .	FACW-	Z 2 - Dominance T	
6. Speraula arvensis	470	<u> </u>	NL	3 - Prevalence Ir	
	TR	<u> </u>	FAC	4 - Morphologica	I Adaptations ¹ (Provide supporting
8. Vicia Gp.		_ <u>N</u>		1	rks or on a separate sheet)
9				5 - Wetland Non-	
10				1 "	rophytic Vegetation ¹ (Explain) soil and wetland hydrology must
11					sturbed or problematic.
Woody Vine Stratum (Plot size:		_= Total Cove	∍r		
1				Hydrophytic	
2.				Variation	Yes No
		_= Total Cove	∍r	Present?	res _/ ` No
% Bare Ground in Herb Stratum 50 %.					
Remarks: $moss = 2$	0%				

Depth	Matrix		Redox	r Features	3			•
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
0-24	10 yR 3/1		7,54R4/4	41	\overline{c}	M	sand	
								
-								
			····					· · · · · · · · · · · · · · · · · · ·
								MM 4.4 A A A A A A A A A A A A A A A A A A
Type: C=C	Concentration D=De	— ——— - nletion DM-I	Reduced Matrix, CS		I or Coate	d Sand Gr	ains ² I noat	tion: PL=Pore Lining, M=Matrix.
			RRs, unless other			d Sand Si		for Problematic Hydric Soils ³ :
Histosol			Sandy Redox (S					Muck (A10)
	pipedon (A2)	-	Stripped Matrix (rarent Material (TF2)
	listic (A3)	_	Loamy Mucky M	ineral (F1) (except	: MLRA 1)	-	Shallow Dark Surface (TF12)
	en Sulfide (A4)	·-	Loamy Gleyed N) .		Other	(Explain in Remarks)
	d Below Dark Surfa	ce (A11) _	Depleted Matrix				3,	
	ark Surface (A12)	-	Redox Dark Surf Depleted Dark S					of hydrophytic vegetation and I hydrology must be present,
	Mucky Mineral (S1) Gleyed Matrix (S4)	-	Depleted Dark S Redox Depressi		1)			i nydrology must be present, disturbed or problematic.
	Layer (if present):	-		~ (1 0)			dinosa (and the state of t
	iches):						Hydric Soil P	resent? Yes No X
Remarks:	, <u></u>						1 -	
							,	

Wetland Hy	drology Indicators		check all that apply	······································			Second	ary Indicators (2 or more required)
Wetland Hy	drology Indicators				es (B9) (e	xcept		ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary India Surface	drology Indicators		Water-Stair			xcept	Wat	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary India Surface	drology Indicators cators (minimum of Water (A1) ater Table (A2)		Water-Stair	ned Leave , 2, 4A , a		xcept	Wat	ter-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hydromary India Surface High Wa	drology Indicators cators (minimum of Water (A1) ater Table (A2)		Water-Stair MLRA 1	ned Leave , 2, 4A , a (B11)	and 4B)	xcept	Wat Dra	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary India Surface High Wa Saturatia Water M	drology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3)		Water-Stair MLRA 1 Salt Crust (ned Leave , 2, 4A, a (B11) ertebrates	and 4B) s (B13)	xcept	Wat Dra Dry	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10)
Wetland Hy Primary India Surface High Wa Saturati Water W Sedimer	cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1)		Water-Stair MLRA 1 Salt Crust (Aquatic Inv	ned Leave , 2, 4A , a (B11) ertebrate: Sulfide Oc	and 4B) s (B13) dor (C1)		Wat Dra Dry Sati	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2)
Wetland Hy Primary India Surface High Wa Saturatia Water W Sedimel Drift Dep Algal Ma	cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4)		Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized Ri	ned Leave , 2, 4A, a (B11) ertebrates Sulfide Oc hizospher of Reduce	end 4B) s (B13) dor (C1) res along d Iron (C4	Living Root	Wat Dra Dry Sati ts (C3) Gec Sha	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9 omorphic Position (D2) allow Aquitard (D3)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimel Drift Dep Algal Ma	cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized R Presence o	ned Leave (, 2, 4A , a (B11) ertebrate: Sulfide Oc hizospher of Reduce on Reduction	s (B13) dor (C1) res along d Iron (C4 on in Tille	Living Rool (1) d Soils (C6)	Wat Dra Dry Sati ts (C3) Gec Sha) FAC	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) pmorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Der Algal Ma Iron Der Surface	cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	one required:	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iror	ned Leave (, 2, 4A, a (B11) ertebrate: Sulfide Oc hizospher of Reduction Stressed	s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Rool (1) d Soils (C6)	Wat Dra Dry Sati ts (C3) Gec Sha FAC	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimel Drift Dep Algal Ma Iron Dep Surface Inundati	cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial	one required:	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iror Stunted or s	ned Leave (, 2, 4A, a (B11) ertebrate: Sulfide Oc hizospher of Reduction Stressed	s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Rool (1) d Soils (C6)	Wat Dra Dry Sati ts (C3) Gec Sha FAC	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) pmorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimel Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial y Vegetated Concav	one required:	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iror Stunted or s	ned Leave (, 2, 4A, a (B11) ertebrate: Sulfide Oc hizospher of Reduction Stressed	s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Rool (1) d Soils (C6)	Wat Dra Dry Sati ts (C3) Gec Sha FAC	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely	redrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial y Vegetated Concar reactions:	one required: Imagery (B7) ve Surface (B	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized R Presence o Recent Iror Stunted or s Other (Expl	ned Leave 1, 2, 4A, a 1B11) ertebrates Sulfide Oc hizospher of Reduce of Reduction Stressed lain in Res	s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Rool (1) d Soils (C6)	Wat Dra Dry Sati ts (C3) Gec Sha FAC	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Water	redrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aerial y Vegetated Concar rvations: ter Present?	one required: Imagery (B7) ve Surface (B	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized Ri Presence o Recent Iror Stunted or s Other (Expl	ned Leave 1, 2, 4A, a 1811) ertebrates Sulfide Oc hizospher of Reduce of Reduction Stressed lain in Res	s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Rool (1) d Soils (C6)	Wat Dra Dry Sati ts (C3) Gec Sha FAC	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Wetland Hy Primary India Surface High Wa Saturati Water M Sedimel Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water	rdrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concavivations: ter Present?	one required: Imagery (B7) ve Surface (B Yes N Yes N	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized R Presence o Recent Iror Stunted or S Other (Expl	ned Leave , 2, 4A, a B11) ertebrates Sulfide Och hizospher of Reduce n Reductio Stressed lain in Res hes):	s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Roof t) d Soils (C6) 1) (LRR A)	Wat Dra Dry Sati ts (C3) Gec Sha) FAC Rais Fros	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)
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Wetland Hy Primary India Surface High Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation P (includes cap	cators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concavivations: ter Present? Present? Present? pillary fringe)	one required: Imagery (B7) ve Surface (B Yes N Yes N	Water-Stair MLRA 1 Salt Crust (Aquatic Inv. Hydrogen S Oxidized R Presence o Recent Iror Stunted or S Other (Expl	ned Leave 1, 2, 4A, a 1B11) ertebrates Gulfide Ochizospher of Reduce on Reduction Stressed lain in Reduction thes):	s (B13) s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roof Soils (C6) LRR A)	Wat Dra Dry Satis (C3) Sha Sha FAC FAC From	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)
Wetland Hy Primary India Surface High Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation P (includes cap	cators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concavivations: ter Present? Present? Present? pillary fringe)	one required: Imagery (B7) ve Surface (B Yes N Yes N	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iror Stunted or S Other (Expl Depth (inc	ned Leave 1, 2, 4A, a 1B11) ertebrates Gulfide Ochizospher of Reduce on Reduction Stressed lain in Reduction thes):	s (B13) s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roof Soils (C6) LRR A)	Wat Dra Dry Satis (C3) Sha Sha FAC FAC From	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)
Wetland Hy Primary India Surface High Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation P (includes cap	cators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concavivations: ter Present? Present? Present? pillary fringe)	one required: Imagery (B7) ve Surface (B Yes N Yes N	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iror Stunted or S Other (Expl Depth (inc	ned Leave 1, 2, 4A, a 1B11) ertebrates Gulfide Ochizospher of Reduce on Reduction Stressed lain in Reduction thes):	s (B13) s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roof Soils (C6) LRR A)	Wat Dra Dry Satis (C3) Sha Sha FAC FAC From	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)
Wetland Hy Primary India Surface High Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Water Table Saturation P (includes car Describe Re	cators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concavivations: ter Present? Present? Present? pillary fringe)	one required: Imagery (B7) ve Surface (B Yes N Yes N	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iror Stunted or S Other (Expl Depth (inc	ned Leave 1, 2, 4A, a 1B11) ertebrates Gulfide Ochizospher of Reduce on Reduction Stressed lain in Reduction thes):	s (B13) s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roof Soils (C6) LRR A)	Wat Dra Dry Satis (C3) Sha Sha FAC FAC From	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)
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Wetland Hy Primary India Surface High Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Water Table Saturation P (includes car Describe Re	cators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial y Vegetated Concavivations: ter Present? Present? Present? pillary fringe)	one required: Imagery (B7) ve Surface (B Yes N Yes N	Water-Stair MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence o Recent Iror Stunted or S Other (Expl Depth (inc	ned Leave 1, 2, 4A, a 1B11) ertebrates Gulfide Ochizospher of Reduce on Reduction Stressed lain in Reduction thes):	s (B13) s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Roof Soils (C6) LRR A)	Wat Dra Dry Satis (C3) Sha Sha FAC FAC From	ter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) inage Patterns (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (C9) omorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)

Project/Site: Silver Reef Casino Mitigation Site	(City/Count	ty: Whatcor	n County	Sampling Date:6/2/2011
Applicant/Owner: Silver Reef Casino / Lummi Nation				State: WA	Sampling Point: SP - //
Investigator(s): Suzanne Anderson, Stephanie Smith, Frank					
Landform (hillslope, terrace, etc.):		Local reli	ef (concave,	convex, none):	Slope (%):
Subregion (LRR): A					
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 percen					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation No , Soil No , or Hydrology No s					s" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No r				eeded, explain any ans	wers in Remarks.)
SUMMARY OF FINDINGS - Attach site map s	howing	sampli	ng point le	ocations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes X No					
	·		the Sampled thin a Wetlar	I Area	, ~ No
	·	VVI	Jilli a WCuai	iui 165 <u>/ -</u>	<u></u>
Remarks:					
VEGETATION – Use scientific names of plant	e			· · · · · · · · · · · · · · · · · · ·	
VEGETATION OSC SCIONATIO NAMES OF PLANE	Absolute	Dominar	nt Indicator	Dominance Test wor	rksheet:
Tree Stratum (Plot size:)			? Status	Number of Dominant	
1				That Are OBL, FACW	
2				Total Number of Dom	inant 3
3				Species Across All St	rata: (B)
4				Percent of Dominant	
Sapling/Shrub Stratum (Plot size:)		_ Total C	70 VC1	That Are OBL, FACW	
1					: Multiply by:
2				1	x 1 =
3				1	x2=
4					x3=
5				FACU species	x 4 =
Herb Stratum (Plot size: 5'radius)		-	ovei	UPL species	x 5 =
1. Poa pratensis	25.	<u> </u>	<u>FAC</u>	Column Totals:	(A)(B)
2. Holcus lanatus	15	<u> </u>	FAC	Prevalence Inde	ex = B/A =
3. Trifolium repens	15	7	FAC	Hydrophytic Vegetat	tion Indicators:
4. Agroshs stolonifera	10	<u>N</u>	- FAC		r Hydrophytic Vegetation
5. Blomus hordealeus ssp.	10	-N	UPL	_X 2 - Dominance Te	
6. Trifolium pratense	10	$\frac{N}{N}$	<u>FACU</u> NI	3 - Prevalence In	
7. Tanacetum vulgare 8. Epilobium citatum	TR	$\frac{1}{N}$	FACW-	4 - Morphological data in Remar	l Adaptations¹ (Provide supporting rks or on a separate sheet)
9. Rumex Crispus	172	N	FACT	5 - Wetland Non-	
10. Stellaria media	TR	<i></i> ∨	FACU	Problematic Hydr	rophytic Vegetation¹ (Explain)
11.					oil and wetland hydrology must
	85	= Total C	over	be present, unless dis	sturbed or problematic.
Woody Vine Stratum (Plot size:)	•				
1				Hydrophytic Vegetation	
2	-	- 7-4-10		Present? Y	′es No
% Bare Ground in Herb Stratum		= Total C	over		
Remarks: $moss = 25\%$				1	1,000,000

Profile Desc	cription: (Describ	e to the dep	th needed to docun	nent the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix			c Feature	es	·	. •	·
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-22	2.5 y 3/1		5 yr 4/4	_2_	<u> </u>	M/PL	<u>sand</u>	
22-26	2.5 / 3/2		5 yr 4/4	2	С	PL	51/ty f	ine sand
				Arr				
			=Reduced Matrix, CS			ed Sand Gr		ation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to all	LRRs, unless other		ted.)			rs for Problematic Hydric Soils ³ :
Histosol			X Sandy Redox (S					Muck (A10)
	pipedon (A2)		Stripped Matrix		•4.			Parent Material (TF2)
	istic (A3)		Loamy Mucky N			t MLRA 1)		Shallow Dark Surface (TF12)
	en Sulfide (A4)	(8.4.4)	Loamy Gleyed I		2)		Otne	er (Explain in Remarks)
	d Below Dark Surfa	ace (A11)	Depleted Matrix		`		3 Indianta	rs of hydrophytic vegetation and
	ark Surface (A12)		Redox Dark Sur Depleted Dark S					nd hydrology must be present,
	/lucky Mineral (S1) Gleyed Matrix (S4)		Redox Depress					s disturbed or problematic.
	Layer (if present)		Nedox Depress	10113 (1 0)			T .	o dictarboa or problematic.
	Layer (if present)	•				,		
Type:	_L \						Usedwin Coll	Present? Yes No
Depth (in Remarks:	cnes):		· · · · · · · · · · · · · · · · · · ·				Hydric Soli	riesentr ies No
HYDROLO	GY							
	drology Indicator	s:	· · · · · · · · · · · · · · · · · · ·					
-			d; check all that appl	v)			Secon	ndary Indicators (2 or more required)
		r one require	Water-Stai		upe (BQ) //	avcent		/ater-Stained Leaves (B9) (MLRA 1, 2,
	Water (A1)				and 4B)	except	**	4A, and 4B)
Saturati	ater Table (A2)						n	rainage Patterns (B10)
			Salt Crust					
	/larks (B1)		Aquatic Inv					ry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen	Sumae C	aor (CT)			aturation Visible on Aerial Imagery (C9)
l	posits (B3)		X Oxidized F	knizospni	eres along	Living Roo		eomorphic Position (D2)
I -	at or Crust (B4)		Presence			-		hallow Aquitard (D3)
l '	posits (B5)					ed Soils (C6		AC-Neutral Test (D5)
	Soil Cracks (B6)				-	01) (LRR A)		aised Ant Mounds (D6) (LRR A)
! —	ion Visible on Aeria		,	lain in R	emarks)		F	rost-Heave Hummocks (D7)
· ·	y Vegetated Conca	ave Surface (B8)					
Field Obser			,					
Surface Wat	ter Present?	Yes	No Depth (inc	ches):	0.11			
Water Table	Present?	Yes X	No Depth (inc	ches):	26			
	pillary fringe)		No Depth (inc					y Present? Yes <u>K</u> No
Describe Re	ecorded Data (strea	ım gauge, m	onitoring well, aerial i	onotos, p	revious in	spections),	ır available:	
Remarks:								
			÷					

Applicant/Owner: Silvor Roof Casino / Lummi Nation State: WA Sampling Point: Sp. 12	Project/Site: Silver Reef Casino Mitigation Site	C	City/Coun	ty: Whatcon	n County	Sampling Date	e: 6/2/2011	
Investigator(s): Suzanne Anderson, Stephania Smith, Frank Leurence, Monike Lange Section, Township, Range: Section 14 / T 8 N / R 1 E Landform (hillalops, terrace, etc.): Local relief (concave, convex, none): Silope (6): Subregion (LRR): Solt Mep Unit Name: Eize sitt loam drained, 0 to 1 percent slopes Are climatic / hydrologic conditions on the sits typical for this time of year? Yes X No. Giff no, explain in Remarks.) No. Giff No, explain in Remarks. No. Giff No, explain in Remarks. SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No. Hydrodypytic Vegetation Present? Yes X No. Wetland Hydrology Present? Yes X No. Wetland Hydrology Present? Yes X No. Supplied Solf Present? Yes X No. Wetland Hydrology Present? Yes X No. Sapling/Shrub Stratum (Plot size:								
Local relief (concave, convex, none): Slope (56)								
Submeglion (LRR): A				=				·····
Soil Map Unit Name: Eliza stit loam, drained, 0 to 1 percent slopes Are climatic / hydrologic conditions on the site typical for this time of year? Yes. X. No. (If no, explain in Remarks) Are Vegetation No. Soil No. or Hydrology No. significantly disturbed? Are Vegetation No. Soil No. or Hydrology No. naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydroptic Vegetation Present? Yes. X. No. Is the Sampled Area within a Wetland? Yes. X. No. Wetland Hydrology Present? Yes. X. No. Is the Sampled Area within a Wetland? VEGETATION - Use scientific names of plants. VEGETATION - Use scientific names of plants. Tees Stratum (Plot size:								
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) Are Vegetation No Soil No or Hydrology No salpificantly disturbed? Are "Normal Circumstances" present? Yes X No Are Vegetation No Soil No or Hydrology No naturelly problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Wetland Hydrology Pres				-				
Are Vegetation No. Soil No. or Hydrology No. significantly disturbed? Are Vegetation No. Soil No. or Hydrology No. naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Hydrophytic Vegetation Present? Yes X No. Is the Sampled Area within a Wetland? Yes						·	stea	
Are Vegetation No Soil No or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Metland Hydrology Present? Yes X No Deminant Indicator Scower Spacies? Status Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) Prevalence index worksheet: Total Cover Prevalence index worksheet: Total Scower of Multiply by. Sapling/Shrub Stratum (Plot size: 1 Total Cover Prevalence Index worksheet: Total Scower of Multiply by. Sapling/Shrub Stratum (Plot size: 2 Y FAC OBL species X1 = FAC Species X2 = FAC Species X3 = FAC Species X3 = FAC Species X4 = UPL species X5 = UPL species								
SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No within a Wetland Pydrology Present? Yes X No within a Wetland? Yes X No Wetland Hydrology Present? Species? Shalus. Tree Stratum (Plot size:						•		
Hydrophytic Vegetation Present? Yes X No Weltand Hydrology Present? Yes X No Weltand?	Are Vegetation No , Soil No , or Hydrology No na	aturaily pro	oblematic	:? (If n	eeded, explain any ans	swers in Remarks	3.)	•
Is the Sampled Area within a Wetland Pydrology Present? Yes X No	SUMMARY OF FINDINGS - Attach site map si	howing	sampli	ng point l	ocations, transect	ts, important	features,	etc.
Wetland rhydrology Present? Yes X No within a Wotland? Yes X No No Remarks: VEGETATION – Use scientific names of plants. Tree Stratum (Plot size:	Hydrophytic Vegetation Present? Yes X No							
VEGETATION - Use scientific names of plants. Absolute Species Status Status Status Species Status Stat	Hydric Soil Present? Yes ★ No			_	Area	X No		
VEGETATION – Use scientific names of plants. Tree Stratum (Plot size:			Wil	uiiii a vveuai	iur res			
Absolute Dominant Indicator Species 7 Status Species 8 Strata Species 8 Status Species 8 Status Species 8 Status Species 8 Status Species 9 Status Status Species 9 Status Status Status Species 9 Status St	Remarks:							
Absolute								
Absolute	VECETATION Has accordific names of plants							
Number of Dominant Species 3	•		Damina		Dawinana Taatuu			
1.							in a	
2.								١)
Sapling/Shrub Stratum (Plot size:					Total Number of Dom	ninant	2	
Sapling/Shrub Stratum (Plot size: Frotal Cover Frot	3				1		(E	3)
Sapling/Shrub Stratum (Plot size:	i				Percent of Dominant	Species	isa	
1.	Sanling/Shrub Stratum (Plot size		= Total C	Cover			100 _{(A}	√B)
2.	i e e e e e e e e e e e e e e e e e e e							
3.	1							
4. 5. Herb Stratum (Plot size: 5' Yadius) 1. Hollus (Anaths 2.0 y FAC 1.1 Hypeches x 5 = 1.2 Column Totals: (A) (B) 2. Tri fullum repens 2.0 y FAC 1.1 Hypechaer is radicata 10 N FACM 15 y FAC 1.1 Hypechaer is radicata 10 N FACM 1.2 - Dominance Test is >50% 6. Bramus hordeaceus 55 N MPL 7. Juncus balticus 55 N FACM 1.2 - Dominance Test is >50% 8. POW pratensis 55 N FACM 1.2 - Dominance Test is >50% 9. Stell aria media 5 N FACM 1.2 - Dominance Test is >50% 10. Tri fullum prateirs 5 N FACM 1.2 - Dominance Test is >50% 10. Tri fullum prateirs 5 N FACM 1.2 - Dominance Test is >50% 11. Hypechaer is radical 5 N FACM 1.2 - Dominance Test is >50% 12. Tri fullum prateirs 5 N FACM 1.2 - Dominance Test is >50% 13. Prevalence Index = B/A = 1.2 - Hydrophytic Vegetation Indicators: 14. Hydrophytic Vegetation Indicators: 15. Tri fullum prateirs 5 N FACM 1.2 - Dominance Test is >50% 16. Bramus harder 5 N FACM 1.2 - Dominance Test is >50% 17. Juncus balticus 5 N FACM 1.2 - Dominance Test is >50% 18. Pow prateirs 5 N FACM 1.2 - Dominance Test is >50% 19. Stell aria media 5 N FACM 1.2 - Dominance Test is >50% 10. Tri fullum prateirs 1.2 - Dominance Test is >50% 10. Tri fullum prateirs 1.2 - Dominance Test is >50% 11. Hydrophytic Vegetation Indicators: 12 Dominance Test is >50% 13 Prevalence Index = B/A = 1.2 - Hydrophytic Vegetation 1.2 - Dominance Test is >50% 14. Hydrophytic Vegetation 1.2 - Dominance Test is >50% 15. Tri fullum prateirs 1.2 - Dominance Test is >50% 16. Bramus harder 1.2 - Dominance Test is >50% 17. Juncus balticus 1.2 - Dominance Test is >50% 18. Provalence Index = B/A = 1.2 - Dominance Test is >50% 19. Tri Rapid Test for Hydrophytic Vegetation 1.2 - Dominance Test is >50% 20. Tri Rapid Test for Hydrophytic Vegetation 1.2 - Dominance Test is >50% 21. Fact hydrophytic Vegetation 1.2 - Dominance Test is >50% 22. Dominance Test is >50% 23. Prevalence Index = B/A = 1.2 - Dominance Test is >50% 24. Hydrophytic Vegetation 1.2 - Dominance Test is >50% 25. Tri full user 1.2 - Domi	i e				1			
Herb Stratum (Plot size: 5' Yadius) FACU species								
Herb Stratum (Plot size: 5' Yadivs)	5	,						
1. Holcus Anatus 20	Horb Stratum (Plat size: 5' VAAIIS)		= Total C	Cover	1			
2. Tri folium repens 3. Agroshs Stoloni fera 4. Hupochaer is radicata 5. Trifolium prateive 6. Bromus hordeaceus 55 N Facut 7. Juncus balticus 8. Pou pralensis 9. Stell aria media 10. N Facut 10. Tracu 10.	1 Holais Janatus	20	V	FAR				B)
3. Agrosh's Stolonifera 15								,
4. Hypochaer is radicata 5. Trifolium protense 6. Bromus hord eaceus ssp. hordeaceus 7. Juncus balticus 8. PDA pratensis 9. Stell aria media 10. N FACH 10. N FACH 11		15	- /		L	***************************************		
5. Trifo lum praterse 6. Bromus hordeaceus 55. Nordeaceus 5 N MPL 7. Junus balticus 5 N FACH 8. PUL pratersis 55 N FACH 9. Stell aria media 5 N FACH 10		10	Ň					
7. Juncus balticus 8. PDA pralensis 9. Still aria media 10					· ·		9	
8. PDA pratensis 9. Stell aria media 5 N FACU 10 5-Wetland Non-Vascular Plants¹ 11 1ndicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Woody Vine Stratum (Plot size:) 1 = Total Cover We Bare Ground in Herb Stratum 5 // = Total Cover	6. Bromus hordeaceus ssp. hordeaceus				3 - Prevalence In	ndex is ≤3.0 ¹		
9. Stellaria media 5 N Facu 5 - Wetland Non-Vascular Plants¹ 10 Problematic Hydrophytic Vegetation¹ (Explain) 11 95 = Total Cover Woody Vine Stratum (Plot size:) 1 = Total Cover Wegetation Present? Yes X No					4 - Morphologica	l Adaptations¹ (P	rovide suppor	ting
10 Problematic Hydrophytic Vegetation¹ (Explain) 11 1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Woody Vine Stratum (Plot size:) 1 = Total Cover Hydrophytic Vegetation Present? YesX No					i		•	
11	1			MACH	l .			
Woody Vine Stratum (Plot size:) 1			<u> </u>		· —			+
Woody Vine Stratum (Plot size:) 1	11	95.	Total C					
2 = Total Cover Vegetation Present? Yes X No	Woody Vine Stratum (Plot size:)	<u> </u>	- Total C	ovei				
2 = Total Cover Vegetation Present? Yes X No	1,				Hydrophytic			
% Bare Ground in Herb Stratum= 1 otal Cover					Vegetation	/oe V No		
Remarks:	% Bara Ground in Horb Stretum 5'/	<u>-</u>	= Total C	over	resent:	. VO _/ INO		
1005 ~ 607.	Remarks:						.	
	11005 - 457.							

Define	-1-41(D11	4 - 4 - 4 - 1	4b		!:		the charmes of i	odinping i one. <u>or - i</u>
		to the dep	th needed to docu			or continu	the absence of it	ndicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	Type ¹	Loc ²	Texture	Remarks
(inches)						PL		Nemana
0-9	2.54 4/2		5 yr4/6	1-2		PL	<u>tinesand</u>	· .
9-17	2.5 y 4/2		SyR 4/6	5	<u>_</u>	M/PL	_ Cocarse sa	ind
			11-11-11		******************************			
12 0.1	10.10.211							
17-24	10YR 3/1	50					course sa	nal
			,					
			Reduced Matrix, C			d Sand Gra		n: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic		LRRs, unless othe		ed.)			or Problematic Hydric Soils ³ :
Histosol			<u>, X</u> Sandy Redox (ıck (A10)
	oipedon (A2)		Stripped Matrix					ent Material (TF2)
	stic (A3)		Loamy Mucky I			MLRA 1)		allow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleyed)		Other (E	xplain in Remarks)
· -	d Below Dark Surfac	ce (A11)	Depleted Matrix				31	£
	ark Surface (A12)		Redox Dark Su		7 \ .			f hydrophytic vegetation and
	Mucky Mineral (S1)		Depleted Dark Redox Depress	•	<i>(</i>)			ydrology must be present, sturbed or problematic.
	Sleyed Matrix (S4) Layer (if present):		Neuox Deples				uniess as	starbed or problematic.
	Layer (ii present).	•						·
Type:								V V
!	ches):		ayer is h				1 .	sent? Yes 🗶 No
HYDROLO	GY							
Wetland Hy	drology Indicators	:				-		
Primary India	cators (minimum of	one required	d; check all that app	ly)			Secondar	y Indicators (2 or more required)
Surface	Water (A1)		Water-Sta	ined Leave	es (B9) (e	xcept	Water	r-Stained Leaves (B9) (MLRA 1, 2,
High Wa	ater Table (A2)		MLRA	1, 2, 4A, a	nd 4B)		4A	i, and 4B)
Saturati	on (A3)		Salt Crust	(B11)			Drain	age Patterns (B10)
Water M	larks (B1)		Aquatic In	vertebrate	s (B13)		Dry-S	eason Water Table (C2)
Sedime	nt Deposits (B2)		Hydrogen	Sulfide Oc	lor (C1)		Satur	ation Visible on Aerial Imagery (C9)
l	posits (B3)		X Oxidized I	Rhizosphei	es along	Living Roof	ts (C3) Geom	norphic Position (D2)
1	at or Crust (B4)		Presence	of Reduce	d Iron (C4	1)	Shallo	ow Aquitard (D3)
Iron Dep			Recent In	on Reduction	on in Tille	d Soils (C6)		Neutral Test (D5)
1	Soil Cracks (B6)		Stunted o	r Stressed	Plants (D	1) (LRR A)) Raise	d Ant Mounds (D6) (LRR A)
1	on Visible on Aerial	Imagery (B				•		-Heave Hummocks (D7)
1 —	y Vegetated Concav		•		•			
Field Obser								
Surface Wat		Yes	No <u> </u>	ches):				-
Water Table			No Depth (in		22"			
1			No Depth (in		15"	Watis	and Hydrology Pr	esent? Yes X No
Saturation P (includes car	resent? pillary fringe)	169 _/	ivo Dehiii (ii	iones)	1 100	_ ***	and right to togy Fi	oscial rosNo
		n gauge, mo	onitoring well, aerial	photos, pro	evious ins	péctions),	if available:	,
		•						
Remarks:					· · · · · · · · · · · · · · · · · · ·	-		

Project/Site: Silver Reef Casino Mitigation Site	(City/County: <u>Whatco</u>	m County Sampling Date: 6/	2/2011
Applicant/Owner: Silver Reef Casino / Lummi Nation			State: <u>WA</u> Sampling Point: <u>S</u>	_{P-} /3
Investigator(s): Suzanne Anderson, Stephanie Smith, Fran	ık Lawrence.	Monika Lange Secti	on, Township, Range: <u>Section 14 / T 38 N /</u>	R 1E
Landform (hillslope, terrace, etc.):		Local relief (concave,	convex, none): Slope	e (%):
Subregion (LRR): A	Lat: _ <i>\</i>	48. 7897	Long: W -/2Z.6608 Datum:	
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 perce				
Are climatic / hydrologic conditions on the site typical for thi				
Are Vegetation No , Soil No , or Hydrology No	•		"Normal Circumstances" present? Yes X	No
Are Vegetation No , Soil No , or Hydrology No			needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS — Attach site map			ocations, transects, important fea	tures, etc.
Hydrophytic Vegetation Present? Yes X	No			·
Hydric Soil Present? Yes N	10 <u>X</u>	Is the Sample	· · · · · · · · · · · · · · · · · · ·	
Wetland Hydrology Present? Yes N	10 <u>V</u>	within a Wetla	iur iesNo	
Remarks:				
VEGETATION – Use scientific names of plar	nte .			
VEGETATION - Ose scientific fiames of plan		Dominant Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size:)		Species? Status		
1			Number of Dominant Species That Are OBL, FACW, or FAC:	(A)
2	_ ,		Total Number of Dominant	
3			Species Across All Strata:	(B)
4			Percent of Dominant Species That Are OBL, FACW, or FAC: 100	
Sapling/Shrub Stratum (Plot size:)		= Total Cover		(A/B)
1.			Prevalence Index worksheet:	L.
2				•
3			FACW species x 2 =	
4			FAC species x 3 =	
5			FACU species x 4 =	
Herb Stratum (Plot size: 5' radius)		= Total Cover	UPL species x 5 =	
1. Poa pratensis	40	Y FAC	Column Totals: (A)	(B)
2. Agropyron repens	15	N FAC-	Prevalence Index = B/A =	
3. Thifolium prateuse	15	N FACU	Hydrophytic Vegetation Indicators:	
4. Holeus ladatus	_ <u>10</u>	N FAC	1 - Rapid Test for Hydrophytic Vegetati	ion
5. Lactuca serriola	_ <u>_ 5</u>	N NL	∠ 2 - Dominance Test is >50%	
6. Trifolum repens	5	N FAC	3 - Prevalence Index is ≤3.0 ¹	
7. Vicia sp.			4 - Morphological Adaptations ¹ (Providence data in Remarks or on a separate s	
8			5 - Wetland Non-Vascular Plants ¹	nooty
9			Problematic Hydrophytic Vegetation ¹ (I	Explain)
11			¹Indicators of hydric soil and wetland hydro	
,,,	90	= Total Cover	be present, unless disturbed or problemation	>.
Woody Vine Stratum (Plot size:)				
1			Hydrophytic	
2			Vegetation Present? Yes No	<u> </u>
% Bare Ground in Herb Stratum <u>5 1/.</u>		= Total Cover	-	_ _
Remarks: mpss = <5%				
1,1000				

pepth <u>Matrix</u> nches) Color (moist)	% C	Redox I	reatures %	_Type ¹	Loc ²	Texture Remarks
nches) Color (moist)		Oldi (IIIdist)	70	1 YDE		
0-11 104K 3/1	60					Medium fine sand
7-23 5y 2.5/1	7	.5yR4/4	2	C	M	coarse sand
ype: C=Concentration, D=Deple					d Sand Gr	
dric Soil Indicators: (Applical				ed.)		Indicators for Problematic Hydric Soils ³ :
_ Histosol (A1)		Sandy Redox (S5				2 cm Muck (A10)
Histic Epipedon (A2)		Stripped Matrix (S		\	*** 5 4 4	Red Parent Material (TF2)
_ Black Histic (A3) _ Hydrogen Sulfide (A4)		Loamy Mucky Mir Loamy Gleyed Ma			WILKA 1)	Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
_ Depleted Below Dark Surface		Depleted Matrix (i	•			2
_ Thick Dark Surface (A12)		Redox Dark Surfa		- 7\		³ Indicators of hydrophytic vegetation and
_ Sandy Mucky Mineral (S1)	•	Depleted Dark Su		<i>(</i>)		wetland hydrology must be present, unless disturbed or problematic.
_ Sandy Gleyed Matrix (S4) estrictive Layer (if present):	· <u>-</u>	Redox Depressio	(ניס (ניס)			uniess disturbed of problematic.
_						
Depth (inches):						l
Depth (merce).						Hydric Soil Present? Yes No 🔨
emarks:						Hydric Soil Present? Yes No _人
emarks: 'DROLOGY						Hydric Soil Present? Yes No _^
emarks: 'DROLOGY /etland Hydrology Indicators:	e teanired, ch	eck all that anniv)				
emarks: 'DROLOGY /etland Hydrology Indicators: rimary Indicators (minimum of on	e required; ch			es (B9) (e	xcepf	Secondary Indicators (2 or more required
emarks: 'DROLOGY 'etland Hydrology Indicators: rimary Indicators (minimum of on _ Surface Water (A1)	e required; ch	Water-Stain	ed Leave		xcept	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1
emarks: **TOROLOGY **Vetland Hydrology Indicators: rimary Indicators (minimum of on _ Surface Water (A1) _ High Water Table (A2)	e required; ch	Water-Stain MLRA 1,	ed Leave 2, 4A, a		xcept	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B)
emarks: 'DROLOGY /etland Hydrology Indicators: rimary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3)	e required; ch	Water-Stain	ed Leave 2, 4A, a 311)	nd 4B)	xcept	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1
emarks: **TOROLOGY **Vetland Hydrology Indicators: rimary Indicators (minimum of on _ Surface Water (A1) _ High Water Table (A2)	e required; ch	Water-Staine MLRA 1, Salt Crust (E	ed Leave 2, 4A, a 311) ertebrates	nd 4B) s (B13)	xcept	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10)
PETATRIC TO SECTION OF THE PROPERTY OF THE PRO	e required; ch	Water-Staine MLRA 1, Salt Crust (E Aquatic Inve	ed Leave 2, 4A, a 311) artebrates ulfide Oc	nd 4B) s (B13) lor (C1)		Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (
POROLOGY Vetland Hydrology Indicators: rimary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	e required; ch	Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Se Oxidized Rh Presence of	ed Leave 2, 4A, a 311) ertebrates ulfide Od izospher	nd 4B) s (B13) for (C1) res along d Iron (C4	Living Roc	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (obts (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
emarks: DROLOGY etland Hydrology Indicators: imary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	e required; ch	Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron	ed Leave 2, 4A, a 311) Intebrates ulfide Oc izospher Reduce Reduction	nd 4B) s (B13) lor (C1) res along d Iron (C4 on in Tille	Living Roc I) d Soils (C6	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (D1) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Process Pro		Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S	ed Leave 2, 4A, a 311) entebrates ulfide Oc izospher Reducte Reductio	nd 4B) s (B13) lor (C1) res along d Iron (C4) on in Tilled	Living Roc I) d Soils (C6	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (D15) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Process Pro	nagery (B7)	Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron	ed Leave 2, 4A, a 311) entebrates ulfide Oc izospher Reducte Reductio	nd 4B) s (B13) lor (C1) res along d Iron (C4) on in Tilled	Living Roc I) d Soils (C6	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (D1) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
rDROLOGY retland Hydrology Indicators: rimary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Im Sparsely Vegetated Concave	nagery (B7)	Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S	ed Leave 2, 4A, a 311) entebrates ulfide Oc izospher Reducte Reductio	nd 4B) s (B13) lor (C1) res along d Iron (C4) on in Tilled	Living Roc I) d Soils (C6	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (D15) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Petland Hydrology Indicators: rimary Indicators (minimum of on Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Im Sparsely Vegetated Concave	nagery (B7) Surface (B8)	Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain	ed Leave 2, 4A, a 311) retebrates ulfide Oc izospher Reduce Reductio Stressed ain in Re	nd 4B) s (B13) lor (C1) res along d Iron (C4) on in Tilled	Living Roc I) d Soils (C6	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (D15) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Process Process Possible Servations: Possible Servations Possible Servation Possible	nagery (B7) Surface (B8)	Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Expla	ed Leave 2, 4A, a 311) ortebrates ulfide Oc izospher Reduce Reductio Stressed ain in Re	nd 4B) s (B13) for (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roc I) d Soils (C6	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (D15) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Process Pro	nagery (B7) Surface (B8) s No _ s No _	Water-Staine MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Explain	ed Leave 2, 4A, a 311) Intebrates ulfide Oc izospher Reduce Reductio Stressed ain in Re	nd 4B) s (B13) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Rootly d Soils (C6 1) (LRR A	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (D15) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Por Content of the co	nagery (B7) Surface (B8) s No _ s No _ s No _	Water-Stains MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Expla	ed Leave 2, 4A, a 311) Intebrates ulfide Oc izospher Reduce Reductio Stressed ain in Reduce nes):	nd 4B) s (B13) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Rooti) d Soils (C6 1) (LRR A	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (obts (C3)) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes No
Personance of the control of the con	nagery (B7) Surface (B8) s No _ s No _ s No _	Water-Stains MLRA 1, Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of Recent Iron Stunted or S Other (Expla	ed Leave 2, 4A, a 311) Intebrates ulfide Oc izospher Reduce Reductio Stressed ain in Reduce nes):	nd 4B) s (B13) lor (C1) res along d Iron (C4 on in Tilled Plants (D marks)	Living Rooti) d Soils (C6 1) (LRR A	Secondary Indicators (2 or more required Water-Stained Leaves (B9) (MLRA 1 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (obts (C3)) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) and Hydrology Present? Yes No
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Applican/Owner, Silver Reaf Casino / Lummi Nation Investigatoris): Suzarne Andreson Stephanie Smith, Frank Lawrence, Monika Lance. Socion Treid (conceive, brance, etc.). Load relief (conceive, correct, none): Subregion (LRS): A Lat. NYS. 78.97 Long. W 12.2.6608 Datum: Solf Map Unit Name: Eliza still form, drained, 0 to 1 poroset slopes And climatic hydrologic coeditions on the site typical for this time of year? Yea. X No. (If no, explain in Remarks.) Are Vegetation. No. Solf. No. or Hydrology. No. adjunificantly disturbed? Are Vegetation. No. Solf. No. or Hydrology. No. asturally problematic? SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yea. X No. Is the Sampled Area within a Wetland? VEGETATION — Use scientific names of plants.	Project/Site: Silver Reef Casino Mitigation Site					
Investigatorics) Surranne Anderson, Stophanle Smith, Frank Lawrence, Montika Lances, Section, Towarship, Range. Saction 14/T38 N/R Hz. Landborn (illistops), terrace, etc.). Local railed (concave, convex, nones): Siope (%):	Applicant/Owner: Silver Reef Casino / Lummi Nation				State: WA	_ Sampling Point: SP - 14
Subminary OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Summary OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Wetanar Hydrophytic Vegetation Present? Yes X No Remarks: No Salings Stratum (Plot size: 1. Salings Stratum (Plot size: 2. Salings Stratum (Plot size: 3. Salings Stratum (Plot size: 4. Salings Stratum (Plot size: 5. Salings Str						
Subminary OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Summary OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Wetanar Hydrophytic Vegetation Present? Yes X No Remarks: No Salings Stratum (Plot size: 1. Salings Stratum (Plot size: 2. Salings Stratum (Plot size: 3. Salings Stratum (Plot size: 4. Salings Stratum (Plot size: 5. Salings Str	Landform (hillslope, terrace, etc.):	L	ocal relief	(concave, c	convex, none):	Slope (%):
Soil Map Unit Name: Eliza sit loam, drained, 0 to 1 potent slopes	Subregion (LRR): A	Lat:/V	148.78	897	Long: W -122,	6608 Datum:
Are vicinatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) Are Vegetation No Soil No or Hydrology No significantly disturbed? Are Normal Circumstances' present? Yes X No naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Hydricohytic Vegetation Present? Yes X No sis the Sampled Area within a Wetland? Wetland Hydrology Present? Yes X No within a Wetland? VEGETATION — Use scientific names of plants. Vegetation — Ves X No within a Wetland? Ves X No World North Control of Presents of Pres						
Are Vegetation No. Soil No. or Hydrology No. significantly disturbed? Are Vegetation, No. Soil No. or Hydrology No. naturally problematic? (If needed, explain any answers in Remarks) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes. X. No. Hydrophytic Vegetation Present? Yes. X. No. Wetsand Hydrology Present? Ves. X. No. Is the Sampled Area within a Wettand? Ves. X. No. Dominant Indicator Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species That Are OBL, FACW, or FAC: A. Septiment (Plot size: "Total Cover" Total Number of Dominant Species That Are OBL, FACW, or FAC: A. Septiment (Plot size: "Total Cover" Total Number of Dominant Species That Are OBL, FACW, or FAC: A. Septiment (Plot size: "Total Cover" Total Number of Dominant Species That Are OBL, FACW, or FAC: A. Septiment (Plot size: "Total Cover" Total Number of Dominant Species That Are OBL, FACW, or FAC: A. Septiment (Plot size: "Total Cover" Total Cover Septiment (Plot Size: "Total Cover" "Total Cover" "Total Cover" "Total Cover Septiment (Plot Size: "Total Cover" "Total Cover" "Total C						
Are Vegetation No Soil No or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Wetland Hydrology wetlation Yes X No Wetland No No Vascular Plants? Yes X No Present? Yes X No Presen						
Hydrophytic Vegetation Present? Yes X No	-				eeded, explain any ansv	wers in Remarks.)
Hydric Soil Present? Yes X No within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Wetland Hydrology Present? Yes X No Wetland? Yes X No No Wetland? Yes X No No Wetland? Yes X No No Wetland? Yes X No Yes X No Yes X Yes X No Yes X	SUMMARY OF FINDINGS – Attach site map sl	howing	sampling	j point lo	ocations, transect	s, important features, etc.
Wetland Hydrology Present? Yes No	Hydrophytic Vegetation Present? Yes X No				_	
VEGETATION - Use scientific names of plants. Absolute Secretary Status Tree Stratum (Plot size:	1 ·		I	•	Area	, No
VEGETATION – Use scientific names of plants. Tree Stratum (Plot size:	7 07					
Absolute Species Status Dominant Indicator % Cover Species Status Status That Are OBL, FACW, or FAC: (A)	Remarks:					
Absolute Dominant Indicator MacCover Species? Status Status Status Status Status That Are OBL FACW, or FAC: (A)						
Tree Stratum (Plot size:	VEGETATION – Use scientific names of plants	5.				
1. That Are OBL, FACW, or FAC: / (A) 2. Total Number of Dominant 3. Horosphrub Stratum (Plot size:					Dominance Test wor	ksheet:
2						•
3. Speling/Shrub Stratum (Plot size:	1					
4	l '					· • • • • • • • • • • • • • • • • • • •
Sapling/Shrub Stratum (Plot size: Prevalence Index worksheet: Total % Cover of: Multiply by:	1				•	
Total % Cover of: Multiply by: OBL species						
2. 3. 4. 5. Herb Stratum (Plot size: 5'radivs) 1. POU PIALOSIS 2. Agropyron repens 3. Dratus hordeaceus 5pp. hordeaceus 4. JUPL Socies 10 N FAC 4. Juncus batheus 5. N FAC 5. Iciphium repens 5. N FAC 6. Cirshum arrense 6. Cirshum pratense 7. Trifohium pratense 8. 9. 10. 11. 11. 11. 12. Woody Vine Stratum (Plot size: 5'radius) 1. Rubus armemacus 2. Woody Vine Stratum (Plot size: 5'radius) 1. Rubus armemacus 2. Woody Vine Stratum (Plot size: 5'radius) 4. Bare Ground in Herb Stratum thace Remarks: Moss = <5'. Vegetation laber is \$50. Bls species x 1 = FACW species x 2 = FAC species x 3 = FAC us species x 4 = UPL species x 5 = Column Totals: (A) (B) Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation					Prevalence Index wo	rksheet:
3	i e			;	Total % Cover of:	Multiply by:
4	i				OBL species	x1 =
FAC Species X 3 = FAC U Species X 4 = UPL Species X 5 = Column Totals: (A) (B)						
Herb Stratum (Plot size: 5 radivs)	1					
1. Pod pratasts 2. Agropyron repens 3. Bronus hordeaceus 45p. hordeaceus 4. Juncus balticus 5. N. FAC 6. Cirsium arvense 8. S. N. FAC 8. S. N. FAC 9. S. N. FAC 10. Trifolium pratense 10. N. FAC 10. Trifolium pratense 10. Trifolium prate	•			ver		
2. Agriphiron repens 3. Browns hordeaceus 45p. hordeaceus 4. Juncus balticus 5. N FACW 5. Trifolium repens 6. Cirsium arrense 8. 9. 10. 11. 11. 11. 11. 11. 11. 11. 12. 13. Browns hordeaceus 45p. hordeaceus 10. 10. 11. 11. 11. 11. 11. 12. 13. Browns hordeaceus 45p. hordeaceus 10. 11. 12. 13. Browns hordeaceus 45p. hordeaceus 10. 11. 12. 13. Browns hordeaceus 45p. hordeaceus 10. 14. Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index = B/A = Hydrophytic Vegetation 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants¹ - Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation 2 - Total Cover Woody Vine Stratum (Plot size: 5¹ YMMS) 1 - Rapid Test for Hydrophytic Vegetation 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) - 5 - Wetland Non-Vascular Plants¹ - Problematic Hydrophytic Vegetation 1 in Remarks or on a separate sheet) - 5 - Wetland Non-Vascular Plants¹ - Problematic Hydrophytic Vegetation 1 in Remarks or on a separate sheet) - 5 - Wetland Non-Vascular Plants¹ - Problematic Hydrophytic Vegetation 1 in Remarks or on a separate sheet) - 5 - Wetland Non-Vascular Plants¹ - Problematic Hydrophytic Vegetation 1 in Remarks or on a separate sheet) - 5 - Wetland Non-Vascular Plants¹ - Hydrophytic Vegetation 1 in Remarks or on a separate sheet) - 5 - Wetland Non-Vascular Plants² - Facular Non-Vascular Plants² - 5 - Wetland Non-		<i>t</i> (o	3/	tean		
3. Browns hordeaceus 4p. hordeaceus 10 N UPL 4. Juncus balticus 5 N FACU 5. Trifolium repens 5 N FACU 6. Cirsium arvense <5 N FACU 7. Trifolium pratense <5 N FACU 8. 9. 10. 11.						
4. Juncus balticus 5. N FAC 5. Irifolium repens 6. Cirsium arvense 7. Trifolium pratense 8. S N FAC 9. S N FAC 1. Rapid Test for Hydrophytic Vegetation 2. Dominance Test is >50% 3. Prevalence Index is ≤3.0¹ 4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 5. Wetland Non-Vascular Plants¹ Problematic Hydrophytic Vegetation¹ (Explain) 10. Solvense Stratum (Plot size: 5¹ YADINS) 1. Rubys armemacus No FAC 4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) S. Wetland Non-Vascular Plants¹ Problematic Hydrophytic Vegetation¹ (Explain) 1. Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Woody Vine Stratum (Plot size: 5¹ YADINS) 1. Rubys armemacus 5. N FAC 4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 1. FACU Problematic Hydrophytic Vegetation¹ (Explain) 1. Hydrophytic Vegetation Present? Yes X No No No Yes X No Yes			-N			
5. Trifolium repens 6. Cirsium arvense 7. Trifolium pratense 8.						
6. Cirsium arvense		5	N		1 — 1	• • •
7. Trifolium pratense < 5 N FAC		<u> </u>			~	
8			N			•
9					data in Remar	ks or on a separate sheet)
11	1					
To = Total Cover be present, unless disturbed or problematic.	10				ı —	
Woody Vine Stratum (Plot size: 5 radius) 1. Rubus armemacus 45 N FACU Hydrophytic Vegetation Present? Yes No No No No No No No N	11					
1. Rubus armemacus 2	Woody Vine Stratum (Blot size: 5 VALAIS)	<u> 70 =</u>	= Total Cov	er		
2		<5	N	FACU	Hydrophytic	
% Bare Ground in Herb Stratum <u>trace</u> Remarks: moss = <5/, Vegetation debris from last year = 30/.					Vegetation	Χ
Remarks: moss = <5%. Vegetation debris from last year = 30%.		<u> </u>	= Total Cov	er	Present? Y	es <u>/ \</u> No
regetation debris from last year = 30%						
Vegetation debris from last year = 30%	11(0)33/1					
	Vegetation debris	from	last d	year =	30/	• • •

Depth Matrix (inches) Color (moist) %	Redox Features Color (moist) % Type ¹ Loc ²	Texture Remarks
	Color (Iridist) 76 Type Loc	Lagrand Cand W/ roots
0-9 104R 3/2		100my sand wy roors
9-13 2.5 / 3/1	5/R4/6 2 C. M/P	L medium sand
	·	
<u></u>		
	· ———	
¹ Type: C=Concentration, D=Depletion, RM	/≡Reduced Matrix, CS=Covered or Coated Sand	Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to al	I LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)		2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA	
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	
Thick Dark Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:		Y
Depth (inches):		Hydric Soil Present? Yes 🔨 No
IVDDOLOOV		
Wetland Hydrology Indicators:	and charles all that apply)	Secondary Indicators (2 or more required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require		Secondary Indicators (2 or more required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
Wettand Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Wettand Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living R	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (6) 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)X Oxidized Rhizospheres along Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (€ Stunted or Stressed Plants (D1) (LRR	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (I	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (€ 10	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (€ 10	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Incompared Surface	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C4) Stunted or Stressed Plants (D1) (LRR B7) Other (Explain in Remarks) No Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Image) Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present?	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) X Oxidized Rhizospheres along Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (II) Stunted or Stressed Plants (D1) (LRR B7) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required and support of the following in the following income	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
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Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (I Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present? Yes Vater Table Present? Saturation Present? Yes Vincludes capillary fringe) Describe Recorded Data (stream gauge, m	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Indicated Concave Surface) Field Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Includes Capillary fringe) Water Table Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, minimum of one required sequence of the primary in t	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (Includes Capillary fringe) Water Table Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, minimum of one required sequence of the primary in t	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Coots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Project/Site: Silver Reef Casino Mitigation Site	City/	County: _V	Whatcom	County	_ Sampling Date: 6/2/2011
Applicant/Owner: Silver Reef Casino / Lummi Nation					
Investigator(s): Suzanne Anderson, Stephanie Smith, Frank					
Landform (hillslope, terrace, etc.):					
Subregion (LRR): A	Lat: N 4	8.789	77	Long: W-122	.6608 Datum:
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 percent					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation No , Soil No , or Hydrology No s					s" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No r				eded, explain any ansv	
SUMMARY OF FINDINGS – Attach site map s			•		•
),	· · ·			
)	1	Sampled A	Area)	✓ No
Wetland Hydrology Present? Yes X No	·	within a	a Wetland	!? Yes/	No
Remarks:		,			
VEGETATION – Use scientific names of plant			,		
i	Absolute Do			Dominance Test wor	
1			1	Number of Dominant : That Are OBL, FACW	
2.			1	Total Number of Domi	inant :
3				Species Across All St	r ,
4				Percent of Dominant S	Species 100
Sapling/Shrub Stratum (Plot size:)	= T	Total Cover	r	That Are OBL, FACW	
1			Γ	Prevalence Index wo	orksheet:
2					: Multiply by:
3.					x 1 =
4.					x 2 = x 3 =
5				•	x4=
Herb Stratum (Plot size: 5' radivs)	= T	Total Cover	г	•	x 5 =
1. Paga prateusis	60	Y F	FAC.		(A)(B)
2. Juncus balticus		4.1	ACW+	Prevalence Inde	ev = R/A =
3. Lactuca serriola	5 1	. 1	NL -	Hydrophytic Vegetat	
4. Phalaris arundinacea			ACW	1 - Rapid Test for	r Hydrophytic Vegetation
5. Potentilla anserma		. 	OBL	🔏 2 - Dominance Te	est is >50%
6. Epilobium ciliatum		1	ACW-	3 - Prevalence In-	
7. Festuca arundinacea			-AC-		I Adaptations ¹ (Provide supporting rks or on a separate sheet)
8. Holeus lanatus	. 		=AC	5 - Wetland Non-	•
9. Trifolum pratense 10. Victa Sp	72	. 1	ACU		rophytic Vegetation ¹ (Explain)
11.					soil and wetland hydrology must
	80 = T	otal Cover		be present, unless dis	sturbed or problematic.
Woody Vine Stratum (Plot size: 5'radivs)					
1. Rubvs armeniacus	<u> </u>	N B	ncu	Hydrophytic	
2			·	Vegetation Present? Y	/es <u> </u>
% Bare Ground in Herb Stratum	<u><5</u> =⊤	otal Cover			
Remarks: moss = trace					
Vandalan daline for	m last	11001 "	ピマハソ	•	
vegetation depuis for	in uni	year .	· 60/,		

OIL Profile Desc	ription: (Describe	to the denth	needed to docu	ment the i	ndicator	or confirm	the abser	ice of	indicator	s.)	nt: <u>SP - /5</u>
Depth	Matrix	, to the depth		ox Features		-: voimini	45001	.55 61		1	
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ²	<u>Texture</u>	<u> </u>	· · · · · · · · · · · · · · · · · · ·	Remarks	<u>; </u>
0-12	2.5 y 2.5/	<u>//</u>	54R4/4	2-5	C	M/PL	medi	rım	sand		
12-24	Varied co	lor					cour	_ Sl S	and		

Type: C=Co	oncentration, D=De	nletion. RM=R	teduced Matrix. C	S≒Covered	d or Coate	ed Sand Gra	ains. 2	—. — Locatie	on: PL≃P	ore Lining,	M=Matrix
	Indicators: (Appli					ou cana on					ric Soils ³ :
Histosol	, , ,	,	Sandy Redox		•				uck (A10)	-	
	pipedon (A2)		_ Stripped Matrix							rial (TF2)	
Black Hi		_	_ Loamy Mucky		1) (excep	t MLRA 1)	_			rk Surface	(TF12)
	n Sulfide (A4)		Loamy Gleyed			,				Remarks)	(/
	d Below Dark Surfa	ce (A11)	Depleted Matri					,		,	
Thick Da	ark Surface (A12)	prophysics	_ Redox Dark Si	urface (F6)			³Indic	cators o	of hydroph	nytic vegeta	ation and
	lucky Mineral (S1)	b	_ Depleted Dark		7)		We	etiand	hydrology	must be p	resent,
	Bleyed Matrix (S4)		_ Redox Depres	sions (F8)			ur	nless d	sturbed o	r problema	tic.
	_ayer (if present):										•
										.,	•
Depth (inc	ches):		<u> </u>			-	Hydric S	Soil Pre	esent?	Yes <u>X</u>	_ No
		:									
Wetland Hyd	GY drology Indicators		check all that app	oly)			Se	econda	ry Indicat	ors (2 or me	ore required)
Wetland Hyd Primary Indic	drology Indicators cators (minimum of		• •	oly} ained Leave	es (B9) (e	except					
Wetland Hyd Primary Indic Surface	drology Indicators cators (minimum of Water (A1)		Water-Sta	ained Leave		except		_ Wate		Leaves (B	ore required) 9) (MLRA 1 ,
Wetland Hyd Primary Indic Surface High Wa	drology Indicators cators (minimum of Water (A1) ater Table (A2)		Water-Sta	ained Leave		except		_ Wate	er-Stained A, and 4E	Leaves (B	
Wetland Hyd Primary Indic Surface High Wa	drology Indicators cators (minimum of Water (A1) uter Table (A2) on (A3)		Water-Sta MLRA Salt Crus	ained Leave	ind 4B)	except		_ Wate 4. _ Drair	er-Stained A, and 4E nage Patte	Leaves (B	9) (MLRA 1,
Wetland Hyd Primary Indic Surface High Wa Katuratio Water M	drology Indicators cators (minimum of Water (A1) uter Table (A2) on (A3)		Water-Standard WLRA Salt Crus Aquatic Ir	ained Leave 1, 2, 4A, a t (B11)	and 4B) s (B13)	except		Wate 4 Drain Dry-	er-Stained A, and 4E nage Patte Season W	i Leaves (B 3) erns (B10) /ater Table	9) (MLRA 1,
Vetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer	drology Indicators cators (minimum of Water (A1) her Table (A2) on (A3) larks (B1) nt Deposits (B2)		Water-Standard WLRA Salt Crus Aquatic Ir	ained Leave 1, 2, 4A, a t (B11) nvertebrate n Sulfide Od	and 4B) s (B13) dor (C1)	·		Wate 4, Drain Dry-S	er-Stained A, and 4E nage Patte Season W ration Vis	Leaves (B 3) erns (B10) /ater Table ible on Aeri	9) (MLRA 1, (C2) al Imagery (C
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep	drology Indicators cators (minimum of Water (A1) her Table (A2) on (A3) larks (B1) nt Deposits (B2)		Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized	ained Leave 1, 2, 4A, a t (B11) nvertebrate n Sulfide Od	s (B13) dor (C1) res along	Living Root	 ts (C3)	Wate 4/ Drain Dry-S Satu Geor	er-Stained A, and 4E nage Patte Season W ration Vis	i Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2	9) (MLRA 1, (C2) al Imagery (C
Wetland Hyderimary Indice Surface High Wa X Saturation Water M Sedimer Drift Dep	cators (minimum of Water (A1) Ater Table (A2) On (A3) Harks (B1) Int Deposits (B2) Poosits (B3) At or Crust (B4)		Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence	ained Leave 1, 2, 4A, a t (B11) nvertebrate a Sulfide Oc Rhizospher e of Reduce	s (B13) dor (C1) res along	Living Root	ts (C3)	Wate 4 Drain Dry-S Satu Geor	er-Stained A, and 4E nage Patte Season W ration Vis morphic P	Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2 ard (D3)	9) (MLRA 1, (C2) al Imagery (C
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma	cators (minimum of Water (A1) Ater Table (A2) On (A3) Harks (B1) Int Deposits (B2) Poosits (B3) At or Crust (B4)		Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir	ained Leave 1, 2, 4A, a t (B11) nvertebrate 1 Sulfide Oc Rhizospher 2 of Reduce on Reduction	s (B13) dor (C1) res along d Iron (C	Living Root 4)	ts (C3)	Wate 4, Drain Dry-Satu Geor Shall	er-Stained A, and 4E nage Patte Season W ration Vis morphic P ow Aquita	Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2 ard (D3)	9) (MLRA 1, (C2) al Imagery (C
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	cators (minimum of Water (A1) tter Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	one required;	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction	s (B13) dor (C1) res along d Iron (C on in Tille	Living Root 4) ed Soils (C6)	ts (C3)	Wate 4. Drair Dry-S Satu Geor Shali FAC	er-Stained A, and 4E nage Patte Season W ration Vis morphic P ow Aquita Neutral T ed Ant Mo	Leaves (B B) erns (B10) /ater Table lible on Aeri osition (D2 ard (D3) est (D5)	9) (MLRA 1, (C2) al Imagery (C)
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	drology Indicators cators (minimum of Water (A1) tter Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	one required;	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted co	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction	s (B13) dor (C1) res along d Iron (C on in Tille	Living Root 4) ed Soils (C6)	ts (C3)	Wate 4. Drair Dry-S Satu Geor Shali FAC	er-Stained A, and 4E nage Patte Season W ration Vis morphic P ow Aquita Neutral T ed Ant Mo	Leaves (BB) erns (B10) /ater Table ible on Aeri osition (D2) ard (D3) Fest (D5) ounds (D6)	9) (MLRA 1, (C2) al Imagery (C)
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	drology Indicators eators (minimum of Water (A1) ter Table (A2) on (A3) tarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concavivations:	one required; Imagery (B7) ve Surface (B8	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted c Other (Ex	ained Leave 1, 2, 4A, a t (B11) nvertebrate a Sulfide Oc Rhizospher of Reduce on Reduction or Stressed xplain in Re	s (B13) dor (C1) res along d Iron (C on in Tille	Living Root 4) ed Soils (C6)	ts (C3)	Wate 4. Drair Dry-S Satu Geor Shali FAC	er-Stained A, and 4E nage Patte Season W ration Vis morphic P ow Aquita Neutral T ed Ant Mo	Leaves (BB) erns (B10) /ater Table ible on Aeri osition (D2) ard (D3) Fest (D5) ounds (D6)	9) (MLRA 1, (C2) al Imagery (C)
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely	drology Indicators eators (minimum of Water (A1) hter Table (A2) on (A3) larks (B1) ht Deposits (B2) hosits (B3) ht or Crust (B4) hosits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concavivations: er Present?	one required; Imagery (B7) ve Surface (B8	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction Stressed xplain in Re	s (B13) dor (C1) res along d Iron (C on in Tille	Living Root 4) ed Soils (C6)	ts (C3)	Wate 4. Drair Dry-S Satu Geor Shali FAC	er-Stained A, and 4E nage Patte Season W ration Vis morphic P ow Aquita Neutral T ed Ant Mo	Leaves (BB) erns (B10) /ater Table ible on Aeri osition (D2) ard (D3) Fest (D5) ounds (D6)	9) (MLRA 1, (C2) al Imagery (C)
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Observa	drology Indicators eators (minimum of Water (A1) hter Table (A2) on (A3) larks (B1) ht Deposits (B2) hosits (B3) ht or Crust (B4) hosits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concavivations: er Present?	one required; Imagery (B7) ve Surface (B8	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted c Other (Ex	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction Stressed xplain in Re	s (B13) dor (C1) res along d Iron (C on in Tille	Living Root 4) ed Soils (C6)	ts (C3)	Wate 4. Drair Dry-S Satu Geor Shali FAC	er-Stained A, and 4E nage Patte Season W ration Vis morphic P ow Aquita Neutral T ed Ant Mo	Leaves (BB) erns (B10) /ater Table ible on Aeri osition (D2) ard (D3) Fest (D5) ounds (D6)	9) (MLRA 1, (C2) al Imagery (C)
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Observ Surface Water	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concave vations: er Present?	Imagery (B7) ve Surface (B8 Yes No	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leave 1, 2, 4A, a t (B11) nivertebrate a Sulfide Oc Rhizospher of Reduce on Reduction or Stressed oplain in Re	s (B13) dor (C1) res along d Iron (C on in Tille	Living Roof 4) ed Soils (C6) 01) (LRR A)	ts (C3)	Wate 4, Drain Dry- Satu Geor Shall FAC Rais Fros	er-Stained A, and 4E Beason W ration Vis morphic P ow Aquita Neutral T ed Ant Mo -Heave F	Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2 ard (D3) est (D5) ounds (D6) lummocks	9) (MLRA 1, (C2) al Imagery (C)
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Observ Surface Water Table Saturation Picincludes cap	drology Indicators cators (minimum of Water (A1) ster Table (A2) on (A3) starks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concavivations: er Present? Present?	Imagery (B7) ve Surface (B8 Yes No Yes No	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction Stressed (plain in Reauches):	s (B13) dor (C1) res along d Iron (C on in Tille Plants (E marks)	Living Roof 4) ed Soils (C6) 01) (LRR A)	ts (C3))	_ Wate _ 4, _ Drair _ Dry-\\ Satu _ Geor _ Shall _ FAC- _ Rais _ Fros	er-Stained A, and 4E Beason W ration Vis morphic P ow Aquita Neutral T ed Ant Mo -Heave F	Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2 ard (D3) est (D5) ounds (D6) lummocks	9) (MLRA 1, (C2) al Imagery (C) (LRR A) (D7)
Wetland Hyderimary Indices Surface High Wax Saturation Water Magal Males Iron Dep Surface Inundation Sparsely Field Observious Water Table Saturation Processing	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concave vations: er Present? Present?	Imagery (B7) ve Surface (B8 Yes No Yes No	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction Stressed (plain in Reauches):	s (B13) dor (C1) res along d Iron (C on in Tille Plants (E marks)	Living Roof 4) ed Soils (C6) 01) (LRR A)	ts (C3))	_ Wate _ 4, _ Drair _ Dry-\\ Satu _ Geor _ Shall _ FAC- _ Rais _ Fros	er-Stained A, and 4E Beason W ration Vis morphic P ow Aquita Neutral T ed Ant Mo -Heave F	Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2 ard (D3) est (D5) ounds (D6) lummocks	9) (MLRA 1, (C2) al Imagery (C) (LRR A) (D7)
Primary Indic Surface High Wa X Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Observ Surface Water Table Saturation Picincludes cap	drology Indicators cators (minimum of Water (A1) ster Table (A2) on (A3) starks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concavivations: er Present? Present?	Imagery (B7) ve Surface (B8 Yes No Yes No	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction Stressed (plain in Reauches):	s (B13) dor (C1) res along d Iron (C on in Tille Plants (E marks)	Living Roof 4) ed Soils (C6) 01) (LRR A)	ts (C3))	_ Wate _ 4, _ Drair _ Dry-\\ Satu _ Geor _ Shall _ FAC- _ Rais _ Fros	er-Stained A, and 4E Beason W ration Vis morphic P ow Aquita Neutral T ed Ant Mo -Heave F	Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2 ard (D3) est (D5) ounds (D6) lummocks	9) (MLRA 1, (C2) al Imagery (C) (LRR A) (D7)
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Observ Surface Water Water Table Saturation Pricincludes cap Describe Rec	drology Indicators cators (minimum of Water (A1) ster Table (A2) on (A3) starks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concavivations: er Present? Present?	Imagery (B7) ve Surface (B8 Yes No Yes No	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction Stressed (plain in Reauches):	s (B13) dor (C1) res along d Iron (C on in Tille Plants (E marks)	Living Roof 4) ed Soils (C6) 01) (LRR A)	ts (C3))	_ Wate _ 4, _ Drair _ Dry-\\ Satu _ Geor _ Shall _ FAC- _ Rais _ Fros	er-Stained A, and 4E Beason W ration Vis morphic P ow Aquita Neutral T ed Ant Mo -Heave F	Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2 ard (D3) est (D5) ounds (D6) lummocks	9) (MLRA 1, (C2) al Imagery (C) (LRR A) (D7)
Wetland Hyd Primary Indic Surface High Wa X Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Observ Surface Water Water Table Saturation Pricincludes cap	drology Indicators cators (minimum of Water (A1) ster Table (A2) on (A3) starks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concavivations: er Present? Present?	Imagery (B7) ve Surface (B8 Yes No Yes No	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction Stressed (plain in Reauches):	s (B13) dor (C1) res along d Iron (C on in Tille Plants (E marks)	Living Roof 4) ed Soils (C6) 01) (LRR A)	ts (C3))	_ Wate _ 4, _ Drair _ Dry-\\ Satu _ Geor _ Shall _ FAC- _ Rais _ Fros	er-Stained A, and 4E Beason W ration Vis morphic P ow Aquita Neutral T ed Ant Mo -Heave F	Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2 ard (D3) est (D5) ounds (D6) lummocks	9) (MLRA 1, (C2) al Imagery (C) (LRR A) (D7)
Wetland Hyderimary Indices Surface High Wax X Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation Sparsely Field Observ Surface Water Water Table Saturation Processorics Reces	drology Indicators cators (minimum of Water (A1) ster Table (A2) on (A3) starks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concavivations: er Present? Present?	Imagery (B7) ve Surface (B8 Yes No Yes No	Water-Sta MLRA Salt Crus Aquatic Ir Hydroger X Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leave 1, 2, 4A, a t (B11) nvertebrate Sulfide Oc Rhizospher of Reduce on Reduction Stressed (plain in Reauches):	s (B13) dor (C1) res along d Iron (C on in Tille Plants (E marks)	Living Roof 4) ed Soils (C6) 01) (LRR A)	ts (C3))	_ Wate _ 4, _ Drair _ Dry-\\ Satu _ Geor _ Shall _ FAC- _ Rais _ Fros	er-Stained A, and 4E Beason W ration Vis morphic P ow Aquita Neutral T ed Ant Mo -Heave F	Leaves (B B) erns (B10) /ater Table ible on Aeri osition (D2 ard (D3) est (D5) ounds (D6) lummocks	9) (MLRA 1, (C2) al Imagery (C) (LRR A) (D7)

Project/Site: Silver Reef Casino Mitigation Site	c	City/County:	Whatcom	County	Sampling Date: <u>6/2/2011</u>
Applicant/Owner: Silver Reef Casino / Lummi Nation					
Investigator(s): Suzanne Anderson, Stephanie Smith, Frank L					
Landform (hillslope, terrace, etc.):					
Subregion (LRR): A	Lat: N	48. 78	897	Long: W-/22.	6608 Datum:
Soil Map Unit Name: Eliza silt loam, drained, 0 to 1 percent					
Are climatic / hydrologic conditions on the site typical for this ti					
Are Vegetation No , Soil No , or Hydrology No sig					s" present? Yes X No
				eeded, explain any ans	
Are Vegetation No , Soil No , or Hydrology No na			·		
SUMMARY OF FINDINGS – Attach site map sh		samplin	g point ic	cations, transect	s, important features, etc.
·		ls th	e Sampled	Area	
		1	in a Wetlan		No
Remarks:					
, and the second					
VEGETATION – Use scientific names of plants					
-		Dominant		Dominance Test wor	rksheet:
1		Species?		Number of Dominant	
1.			Ţ	That Are OBL, FACW	, or FAC (A)
2				Total Number of Dom	
3				Species Across All St	rata: (B)
4		= Total Co		Percent of Dominant : That Are OBL, FACW	
Sapling/Shrub Stratum (Plot size:)		'		Prevalence Index wo	
1					: Multiply by:
2					x1 =
3				FACW species	x 2 =
4				FAC species	x.3 =
5		= Total Co	ver		x 4 =
Herb Stratum (Plot size: 5'radivs)		•	_		x 5 =
1. Poa pratensis	40	<u> </u>	FAC	Column Totals:	(A) (B)
2. Festuca curundinacea	/5		FAC-		ex = B/A =
3. Holcus (anatus	15	-	FAC	Hydrophytic Vegetat	
4. Agrostis gigantea 5. Hypocharis radicata	10	<u>N</u>	FAC		r Hydrophytic Vegetation
6. Agroshs Stolombua	<u>10</u> 5		FACU FAC	2 - Dominance To	
7. Rumex crispus	5	N	FACT	3 - Prevalence In	idex is ≤3.0° I Adaptations¹ (Provide supporting
8. Epilobium ciliahum	TR	N	FACW-	data in Remar	rks or on a separate sheet)
9. Phalaris arundinacea	722	N	FACW	5 - Wetland Non-	Vascular Plants ¹
10. Trifolium pratense	フス	N	FACU	Problematic Hydr	rophytic Vegetation ¹ (Explain)
11. Vicia Sp.	TR	_ <i>N</i>	_	¹ Indicators of hydric s	soil and wetland hydrology must
	100	= Total Co	ver	be present, unless dis	sturbed or problematic.
Woody Vine Stratum (Plot size:)					
1				Hydrophytic Vegetation	V
2		= Total Co	ver	Present? Y	res No
% Bare Ground in Herb Stratum <u>5 /</u>		-			
Remarks: Vegetation debris	(dear	x()=35	57.		
V agriculture	ų	•	,		

-	-	

Profile Desc	cription: (Describ	e to the dep	th needed	i to docun	nent the i	ndicator	or confirm	the absence of indicators.)
Depth	Matrix				<u> Features</u>			
(inches)	Color (moist)	%	Color ((moist)	%	Type	_Loc ²	Texture Remarks
1 0-8	10 yx 4/1		7.5 y	<u>R 4/4 </u>	_2	<u></u>	M/PL	51/ty fine sand
8-24	varied co	dor						coarse sand
		***			•			
								
					h	*********		
								3
	oncentration, D=D Indicators: (App						ed Sand Gra	ains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
1		iicabie to aii				eu. j		•
Histosol	pipedon (A2)			y Redox (S ped Matrix				2 cm Muck (A10) Red Parent Material (TF2)
Black Hi				ny Mucky M) (except	t MLRA 1)	Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			y Gleyed N	-		,	Other (Explain in Remarks)
1	d Below Dark Surf	ace (A11)	Deple	eted Matrix	(F3)			
1	ark Surface (A12)			x Dark Sur				³ Indicators of hydrophytic vegetation and
	Mucky Mineral (S1)			eted Dark S	-	7)		wetiand hydrology must be present,
	Gleyed Matrix (S4)		Redo	x Depressi	ons (F8)			unless disturbed or problematic.
	Layer (if present)	:						
Type:	-h) -							Hydric Soil Present? Yes K No
	ches):							Hydric Soil Present? Tes No
Remarks:								
							<u>.</u>	
HYDROLO	GY							
Wetland Hv	drology Indicator	's:			• ••			
_	cators (minimum o		d: check a	ii that apply	/)			Secondary Indicators (2 or more required)
	Water (A1)			Water-Stai		es (B9) (e	xcept	Water-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)		_		l, 2, 4A, a			4A, and 4B)
Saturati				Sait Crust				Drainage Patterns (B10)
i	Marks (B1)			Aquatic Inv		s (B13)		Dry-Season Water Table (C2)
1	nt Deposits (B2)			Hydrogen (Saturation Visible on Aerial Imagery (C9)
Drift De							Living Roof	ts (C3) Geomorphic Position (D2)
	at or Crust (B4)		_	Presence o				Shallow Aquitard (D3)
Iron Der	oosits (B5)		_	Recent Iro	n Reductio	on in Tille	d Soils (C6	
Surface	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
Inundati	ion Visible on Aeria	al Imagery (B	7)	Other (Exp	lain in Re	marks)		Frost-Heave Hummocks (D7)
Sparsely	y Vegetated Conc	ave Surface (B8)					
Field Obser	vations:							
Surface Wat	er Present?	Yes	No	Depth (inc	:hes):	_ >1	_	
Water Table	Present?	Yes X	No _	Depth (inc	hes):	30 " <u> </u>		
Saturation P		Yes X	No	Depth (inc	:hes):	3"	Wetla	and Hydrology Present? Yes No
	pillary fringe) corded Data (strea						nections)	if available:
Describe Ve	colucu Data (Sties	am gauge, me	onicing W	en, aeriai þ	niows, pi	SVIOUS IIR	productio), I	II LIVELLICADO.
Remarks:								
ixemaiks.								

Appendix D—Photolog



Looking west from eastern end of the mitigation area at the high saltmarsh community.



Looking east from central portion of the mitigation area – note the Baltic rush/Pacific silver weed high saltmarsh community



Looking east/southeast from central/eastern end of the mitigation area. Note the low saltmarsh community dominated by alkali bulrush in the foreground, and the mudflat behind.



Looking east/northeast from central portion of the mitigation area. Note the transition from the low saltmarsh (lighter green alkali bulrush) to the high saltmarsh (darker green Baltic rush) community



Looking east/southeast from western end of the mitigation area, with a high saltmarsh community in the foreground.



Looking west/southwest from southeast corner of the mitigation area. Note the vegetated mud flat in the center of the photo.



Looking south from eastern end of the mitigation area. Interior of flags (in the center of the photo) is upland (in the vicinity of SP 15), likely caused by former access/construction road.



Looking east from northwest corner of the mitigation area. The central portion of photo is the wrack/debris line deposited during winter storms, near the former access road that delimits the northern project and wetland boundary.



Looking east/southeast from northwest corner of the mitigation area. Note the transition from the high salt marsh (dark green Baltic rush), to the low salt marsh (lighter green alkali bulrush), to the mud flat.



Looking east from the southwest corner of the mitigation area.



Looking west along the dike (sea wall) and slough along the southeast corner of the mitigation area - the mitigation area is in the center and right side of the photo.

Appendix E—Wetland Rating Form and WSDOT BPJ

Wetland name or number:	A
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WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): S	ilver Reef Casino V	Vetland Mitiga	tion Area		ate of site	e visit: <u>6/1/11</u>
Rated by : S. Anderson & S. Sm	ith Trained	by Ecology?	Yes 🗸	No \square		Date: 11/1/06
SEC: <u>14</u> TWNSHP: <u>3</u>	8N RNGE	: <u>1E</u>	Is S/T/R in	n Appendix	D? Yes	□No ✓
Map of we	tland unit: Figure	2	E	stimated si	ze: <u>14.2</u>	acres
	SUMM	ARY OF RA	TING			
Category based on FUNCTIO	NS provided by we	etland				
I 🗆	II 🗆	III		IV		
Category I = Score >= 70	Score for Water Quality Functions					
Category II = Score 51-69	Score for Hydrologic Functions					
Category III = Score 30-50	Score for Habitat Functions					
Category IV = Score <30			T	OTAL sco	re for fur	nctions
Category based on SPECIA	L CHARACTER	RISTICS of v	vetland			
I	II 🗆	Does	not Apply			
Final (Category (choose the "hi	ighest'' cat	egory fron	n above)	I
Chad	the appropriate to		of4lod	hoing note	, al	

Check the appropriate type and class of wetland being rated.

Wetland Type	
Estuarine	7
Natural Heritage Wetland	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	

Wetland Class	
Depressional	
Riverine	
Lake-fringe	
Slope	
Flats	
Freshwater Tidal	
Check if multiple HGM classes are present	

Comments:

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below, you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Special Protection (in addition to the			
	protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any federally listed Threatened or Endangered (T/E) plant or animal species?		7
	For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		
SP2.	Has the wetland unit been documented as habitat for any state listed Threatened or Endangered animal species?		~
	For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands.		
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		4
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special		7
	significance.		

To complete the next part of the data sheet, you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Vegetated Wetlands in Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, indentify which hydrologic criteria in questions 1-7 apply and go to Question 8.

1.	Are the water levels in the entire unit usually controlled by tides (i.e., except during floods)?
	□ NO - go to 2
	If YES, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
	☐ YES - Freshwater Tidal Fringe ☐ NO - Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe, use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe, it is rated as an Estuarine wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Saltwater Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is being kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p. xx).
2.	The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface \square NO - go to 3 \square YES - the wetland class is Flats
	If your wetland can be classified as a "Flats" wetland, use the form for Depressional wetlands.
3.	Does the entire wetland unit meet both of the following criteria?
	☐ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) where at least 20 acres (8 ha) are permanently inundated (ponded or flooded);
	☐ At least 30% of the open water area is deeper than 6.6 feet (2 m)?
	□ NO - go to 4 □ YES - the wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland unit meet all of the following criteria?
	☐ The wetland is on a slope (slope can be very gradual).
	The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
	The water leaves the wetland without being impounded.
	NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 feet in diameter and less than 1
	foot deep). ☐ NO - go to 5 ☐ YES - the wetland class is Slope

5.	Does the entire wetland unit meet all of	f the following criteria?		
	The unit is in a valley, or stream or river.	am channel, where it gets inundated by	overbank flooding from th	at stream
	☐ The overbank flooding occurs	s once every two years.		
	□ NO - go to 6	☐ YES - the wetland class is Riveri	ne	
6.	Is the entire wetland unit in a topograph time of the year? <i>This means that any o</i>	utlet, if present, is higher than the inte	rior of the wetland.	at some
	☐ NO - go to 7	YES - the wetland class is Depre	ssionai	
7.	Is the entire wetland unit located in a vet through it and providing water? The we wetland may be ditched, but has no obv	stland seems to be maintained by higher ious natural outlet.	er ground water in the area.	
	☐ NO - go to 8	YES - the wetland class is Depre	ssionai	
8.	Your wetland unit seems to be difficult example, seeps at the base of a slope method wetland has a zone of flooding along its REGIMES DESCRIBED IN QUESTIC sketch to help you decide.) Use the folly you have several HGM classes present recommended in the second column reparea of the second class is less than 109 90% of the total area. HGM Classes Within a Delin	ay grade into a riverine floodplain, or a s sides. GO BACK AND IDENTIFY VONS 1-7 APPLY TO DIFFERENT AR dowing table to identify the appropriate within your wetland. NOTE: Use this presents 10% or more of the total area of 6 of the unit, classify the wetland using	a small stream within a depi WHICH OF THE HYDROI EAS IN THE UNIT (make c class to use for the rating s table only if the class that is of the wetland unit being ra	ressional LOGIC a rough system if ted. If the
		ieuieu Weiunu Bounuury		
	Slope + Riverine		Riverine	
	Slope + Depressional		Depressional	
	Slope + Lake-fringe		Lake-fringe	
	Depressional + Riverine along	g stream within boundary	Depressional	
	Depressional + Lake-fringe		Depressional	
	Saltwater Tidal Fringe and an	y other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics	7
			Special characteristics	

If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and choose the appropriate answers and

Wetland	d Type	
Check o	ff any criteria that apply to the wetland. Check the appropriate Category when the appropriate	Category
SC 1.0	Estuarine Wetlands (see p. 86)	
	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	✓ The dominant water regime is tidal,	
	✓ Vegetated, and	
	✓ With a salinity greater than 0.5 ppt.	
	✓ YES - Go to SC 1.1	
SC 1.1	Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary	
SC 1.2	Is the wetland unit at least 1 acre in size and meeting at least two of the following three ✓ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, — At least 3/4 of the landward edge of the wetland has a 100 foot buffer of shrub, forest, ✓ The wetland has at least two of the following features: tidal channels, depressions ✓ YES = Category I — NO = Category II	I

SC 2.0	Natural Heritage Wetlands (see p. 87)	Category
	Natural Heritage wetlands have been identified by the Washington Natural Heritage	
SC 2.1	Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D	
	☐ YES - contact WNHP/DNR (see p. 79) and go to SC 3.2 ☐ NO	
SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state Threatened or Endangered plant species? YES = Category I NO - not a Heritage wetland	
SC 3.0	Bogs (see p. 87)	
50 5.0	Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetations	
	1. Does the unit have organic soil horizons (i.e., layers of organic soil), either peats or	
	\square YES - go to Q. 3 \square NO - go to Q. 2	
	2. Does the unit have organic soils, either peats or mucks, that are <16 inches deep over	
	\square YES - go to Q. 3 \square NO - not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other	
	\square YES - is a bog for purpose of rating \square NO - go to Q. 4	
	NOTE: If you are uncertain about the extent of mosses in the understory	
	4. Is the unit forested (>30% cover) with sitka spruce, subalpine fir, western redcedar,	

SC 4.0	Forested Wetlands (see p. 90)	Category	
	oes the wetland unit have at least 1 acre of forest that meets one of these criteria for the		
	Old-growth forests: (west of Cascade Crest) Stands of at least 2 tree species,		
	NOTE: The criterion for dbh is based on measurements for upland		
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 -		
	YES = Category I NO - not a forested wetland w/ special characteristics		
SC 5.0	Wetlands in Coastal Lagoons (see p. 91)		
	Does the wetland meet all of the following criteria of a wtland in a coastal lagoon?		
	The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently,		
	☐ The lagoon in which the wetland is located contains surface water that is saline or		
	$\ \ \ \ \ \ \ \ \ \ \ \ \ $		
SC 5.1	Does the wetland meet all of the following 3 conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).		
	At least 3/4 of the landward edge of the wetland has a 100 foot buffer of shrub, forest, or ungrazed or unmowed grassland.		
	☐ The wetland is larger than 1/10 acre (4,350 square feet).		
	☐ YES = Category II ☐ NO = Category II		

SC 6.0	Interdunal Wetlands (see p. 93)	Category
	Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?	
	YES - go to SC 6.1 \square NO - not an interdunal wetland for rating	
	If you answer Yes, you will still need to rate the wetland based on its functions. In practical terms, that means the following geographic areas: • Long Beach Peninsula - lands west of SR 103 • Grayland-Westport - lands west of SR 105 • Ocean Shores-Copalis - lands west of SR 1115 and SR 109.	
SC 6.1	Is wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger? YES = Category II NO - go to SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1	
SC 6.2	YES = Category III	
Categor	y of wetland based on Special Characteristics	
	he "highest" rating if wetland falls into several categories, and record on p. 1.	I
If you an	swered NO for all types, enter "Not Applicable" on p. 1.	

Wetland Functions and Values Summary Form - WSDOT's BPJ Characterization

Wetland I.D. Wetland A Project: Silver Reef Casino Mitigation Site Assessed by: S. Anderson and S. Smith

Cowardin Class: Ecology Category: I Local Rating: 1 Wetland Size: 14.2 acres Date: 6/1/2011

Estuarine Intertidal

Emergent

	Occurrence			Principal		
Function/Value	Υ	Ν	Rationale	Function(s)	Comments	
Flood Flow Alteration	Y		The wetland is relatively flat and receives floodwater from adjacent stream.	N	Wetland is located in the lower portion of watershed and is tidally influenced; however, its ability to provide flood storage is relatively small compared to the upstream watershed or the Bay	
Sediment Removal	Υ		Dense herbaceous vegetation, slow moving water, sediment sources upstream	Υ	Due to tidal action, periods of still water are limited, and there is little or no ponding in wetland at low tide.	
Nutrient & Toxicant Removal	Y		Sources of excess nutrients and toxicants upstream, dense herbaceous vegetation, bi-daily tidal flooding	Y	Although wetland lacks long duration water detention, it has slow moving water at high tide and dense herbaceous vegetation	
Erosion Control & Shoreline Stabilization	Y		Dense herbaceous vegetation and limited signs of erosion	Y	Has medium opportunity during tidal flows and winter storms/	
Production of Organic Matter and its Export	Υ		Dense herbaceous vegetation and bi-daily tidal flooding/flushing	Y		
General Habitat Suitability	Y		Buffer to north not developed or in use, high plant species diversity, SS, EM and AB Cowardin classes, observed wildlife	Y	Adjacent land uses consists of farmland and gravel road to west. Deer, coyote, river otter, fish, and numerous bird species observed.	
Habitat for Aquatic Invertebrates	Υ		Little permanent ponded water associated with wetland.	N	Adjacent slough system and pond provide freshwater invertebrate habitat.	
Habitat for Amphibians		N	Limited due to lack of ponded freshwater	N	Wetland provides vegetation and structural complexity for adults, but does not provide areas for breeding.	
Habitat for Wetland-Associated Mammals	Y		Permanent water adjacent to wetland	Y	Evidence of use by wildlife as noted by tracks, scat and biologist observation.	

Adapted from: Washington State Department of Transportation Wetland Functions Characterization Tool for Linear Projects (W. Null, G. Skinner, and W. Leonard, WSDOT June, 2000)

Habitat for Wetland-Associated Birds	Y		Presence of shallow open water, emergent vegetation, forested and scrub-shrub in buffer, mud flats, relatively undisturbed grasslands in buffer.	Y	Numerous bird species have been observed by biologists while on site.
General Fish Habitat	Υ		Twice daily tidal connection to fish-bearing water body.	Υ	Fish have been observed by biologists while on site.
Native Plant Richness	Υ		Native plants dominate the wetland.	N	Does not contain 3 or more strata of vegetation, does not have mature trees.
Educational or Scientific Value		Ν	No documented scientific or educational use.	N	Lacks parking for easy public access.
Uniqueness and Heritage		N	Does not contain document occurrence of state or federally listed species, no designated by National Parks Service.	N	Wetland is part of an estuary.

Appendix F—Aerial Photo Progression



Figure I—Future Silver Reef Casino (Lummi Nation) Wetland Mitigation Site: December 22, 2000



Figure 2—Future Silver Reef Casino (Lummi Nation) Wetland Mitigation Site: May 30, 2001



Figure 3—Silver Reef Casino (Lummi Nation) Wetland Mitigation Site: February 21, 2004



Figure 4—Silver Reef Casino (Lummi Nation) Wetland Mitigation Site: May 15, 2008

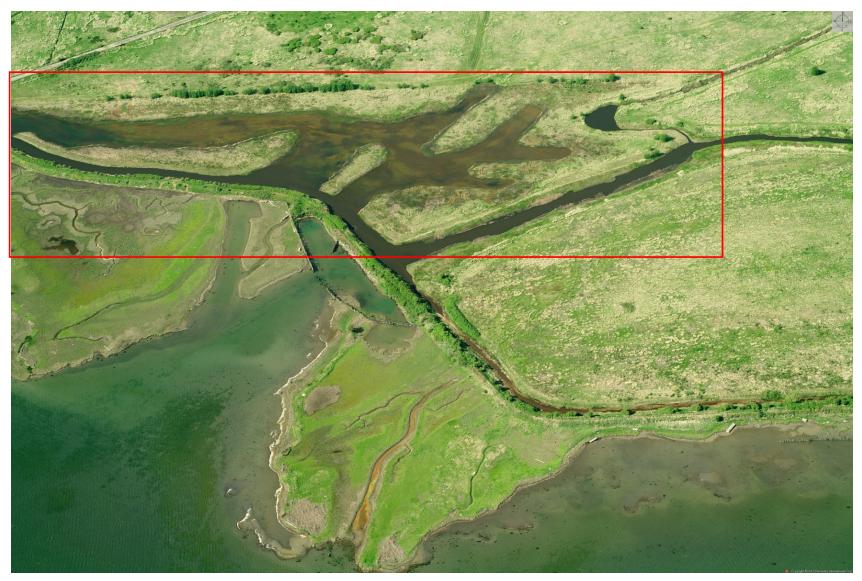


Figure 5—Silver Reef Casino (Lummi Nation) Wetland Mitigation Site: May 15, 2008



Figure 6—Silver Reef Casino (Lummi Nation) Wetland Mitigation Site: March 21, 2010



Figure 7—Silver Reef Casino (Lummi Nation) Wetland Mitigation Site: August 26, 2011



Figure 8—Silver Reef Hotel, Casino, and Spa impact site prior to construction: July 16, 1998. Note the lack of riparian vegetation along Schell Creek located along the eastern boundary of the site.



Figure 9— Silver Reef Hotel, Casino, and Spa impact site post-construction: August 26, 2011. Note the improved riparian corridor along Schell Creek located along the eastern boundary of the site.